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ART. I.—*Speculations on the Facts presented in the Analytical Report on Mesmeric Somniloquism, published in the last number of this Journal.* By DANIEL DRAKE, M.D.

The estimate of the phenomena of Mesmerism, by different minds, presents us with examples of the easiest credulity, and the most obstinate unbelief, not less than a reasonable scepticism. This ultraism has arisen from want of analysis. Among the phenomena there are some, which have their prototype in nature; others which have not. To indulge a spirit of infidelity in regard to the former, is quite as absurd, as to cherish credulity in reference to the latter; and still, many persons have grouped the whole, and affirmed or denied their truth

en masse. A rational scepticism will not admit the reality of the lowest, without evidence; nor refuse to grant that the highest and most startling *may* be true. It will, however, demand for the latter an amount of proof far greater than for the former—an amount corresponding with their wider departure from the observed and ascertained phenomena of nature. Of the two classes of phenomena, presented by mesmeric somniloquism, one bears a close resemblance to those which characterize natural sleep-talking—the other are not yet known to belong to that state. Now the degree of proof on which we may admit the former, is much less than would justify our admission of the latter. Let us inquire separately into their claims on our belief.

The lowest degree of natural sleep-walking and sleep-talking, is that in which the individual while in ordinary sleep, may strike at an imaginary object, or sit up in bed, or pronounce a sentence, as asking or answering a question—uttering an exclamation, or giving a command. In a higher degree, he will rise and walk about, or, continuing in bed, carry on a conversation with an imaginary person, or sing or declaim. When up, he will wander among objects in the dark without encountering them, even when blindfolded; and should he undertake to perform a work which is generally directed by the sense of sight, he appears to be capable of going on with it, while screens impenetrable to light, are interposed between his eye and hand. At other times he uses light, or *seems* to use it, and has been known, when his candle was snuffed out, to re-light it, and then proceed with his manipulation. Sometimes he stumbles over objects to a degree which indicates that he does not recognise them, and occasionally mistakes one for another. In this state, whether silent or talkative, he is generally inattentive to what is said to him, and even to the loudest noises, as he is insensible, in a great degree, to bright lights, to strong odors, and to impressions, whether painful or pleasurable, on his nerves of feeling. But, every now and then, he will unexpectedly address himself to an attendant, whom he had immediately before refused to re-

cognize; and in other instances, after many questions had been asked without answers being returned, he has made a distinct reply. Whether he himself had put the question or made the reply, the individual thus recognized may generally, thenceforth, maintain intercourse with him, and more or less control the current of his thoughts and actions. This condition is often brought on by a slight degree of bodily indisposition, by a supper of indigestible food, by a previous highly or painfully excited state of feeling, or by remarks and questions patiently whispered in the ear. Occasionally we find it to affect several members of the same family. From this condition the patient may be aroused, but often returns to his bed, and the somnambulic gives place to natural sleep. Whether he awake from one or the other, he has, in general, no recollection of any thing but a dream. Hence somnambulism and somniloquism, have been defined to be dramatised dreams. The dream is often recollected, but in many instances, as in common dreams, it cannot be recalled. It is probable, that in these dreams, although the imagination of course is active, as in all cases of dreaming, the comparing or reasoning powers are more awake than in ordinary dreams, which are too inconsistent and disjointed to prompt to any kind of action; in proof of which, I may refer to the practical ability displayed by many somnambulists, who pass uninjured through difficult and perilous places, though, sometimes, they destroy themselves by deliberate acts, unaware of the danger before them; but the activity of the reasoning faculties is occasionally evinced, in a still more conclusive way, by their literary compositions, and the mathematical solutions which they have been known to work out. Such dreams bear much resemblance to monomania, or derangement on one subject; while ordinary dreaming has, in its incoherent, grotesque and ever-varying creations of fancy, a close resemblance to general mania, in which the mind does not associate well, is not fixed on any single group of ideas long enough to compare them; and of course the body, although agitated, is not prompted to any definite or sustained mode of action. In the ab-

sence of all fixed purpose, there is an equal absence of defined and efficient execution.

There are two modifications of somniloquism and somnambulism which should be recognized in this inquiry. The first is the reverie, which sometimes alternates with convulsions, in which the individual displays a strong current of connected thoughts with appropriate feelings, accompanied with suitable action; but is wholly inattentive to all surrounding objects or persons; except when they, or what they say, can be incorporated with the catention of ideas. This state of mind is generally of short duration. The second may be called a protracted reverie, or prolonged somnambulism; continuing for days, and even weeks, during which the individual will act and converse with those around him, in an altered manner, and not in full sympathy with them. In coming out of this condition, the mind takes up the ideas on which it happened to be occupied at the access of the paroxysm; and is unconscious of its having existed; indeed, may remember no part of it; but upon the return of the fit will recollect the whole.

The principal characteristics then, of ordinary somnambulism and somniloquism, including, in part at least, the curious varieties just mentioned, are the following:

1. They occur chiefly in young persons of both sexes, in those of a delicate nervous system, and in connexion with bad health.

2. In some cases, the sense of sight seems to be greatly increased in acuteness, or that of feeling, or the instinct of the individual in some mysterious way, is substituted for it.

3. There is great abstraction. The attention of the person is entirely concentrated on the train of thoughts which is passing through his mind; and he is, consequently, insensible to what is around him, and even to violence on his body. But if, by chance or perseverance, his attention should be gained, he may in general be guided both in his thoughts and actions. His state of mind may be modified without his being awakened.

4. There is a spontaneous, inherent activity of imagination,

which excites into action the muscles of locomotion and speech.

Let us now compare mesmeric, with natural somnambulism and somniloquism.

1. It is chiefly producible in children and young persons of both sexes; in individuals of frail and susceptible nervous systems; and in natural sleep-walkers, or members of families in which somnambulism prevails.

2. Of all the alleged phenomena of this state, none have excited more wonder, than those connected with the sense of sight; which has been said to be greatly increased in acuteness, and even transferred from the optic to other nerves. This is the *clairvoyance* of writers on mesmerism.

3. In this condition, the abstraction of mind is so great, that the individual is inattentive to impressions which in the waking state would give acute pain; and cannot be spoken with, except by the mesmeriser, who had her attention from the beginning, or by persons introduced by him.

These analogies between ordinary and mesmeric somniloquism, if not overcome by a greater number of differences, must lead to the conclusion, that they are but varieties of the same curious condition of the nervous system. Now what are the contrarieties? They seem to me to be the two following: 1st. The mesmeric state is more cataleptic—attended with less locomotion, and displays much less of a somnambulic character. 2d. It is attended with less talking, the individual seldom speaking except when spoken to, then generally answering in a single sentence, and relapsing into silence. From these two facts we may conclude, that the mind is inactive, that the animating dream is wanting, and, of course, there is absence of spontaneous walking and talking. If locomotion and loquacity were added, by an active instead of a passive state of the imagination, the two conditions—ordinary and mesmeric—would appear to be identical.

There is then no credulity in admitting the reality of mesmeric somniloquism; and although, no doubt, it is often simu-

lated for gain, I am disposed to regard it as a fact, and reason upon it accordingly.

It is affirmed, however, that a peculiar sympathy of both body and mind exists on the part of the mesmeric somniloquist with the mesmerizer and those introduced, or as the technical phrase is, put in communication. But this sympathy is not reciprocal. It is confined to the somniloquist, who, it is asserted, can be made to experience the same feelings of both body and mind, and entertain the same thoughts, as the person in conversation with her, and this in some unknown manner by some occult influence, altogether independent of the ordinary means of intercourse by the senses. Let it here be particularly noted, that it is not a stimulation of the body or mind of the somniloquist into increased activity, her own sensations and thoughts being the objects of her consciousness; but an actual infusion of the feelings and thoughts of the person in communication, at the expense of those belonging to the somniloquist, and that, too, to such a degree, that if she had pleasurable sensations of the body before, she would, in the midst of them suffer pain, if his body were wounded; and although she might retain her own consciousness so far as to understand and answer questions, put to her through the medium of the ear; still that her predominant ideas are those impressed on her mind, which arise simultaneously with their origin in the mind of the person who is in communication. This is the mysterious and incomprehensible mental state of the mesmeric somniloquist, and to the ascertainment of its reality, the experiments of the association were directed.

Before proceeding to speculate upon them, we must refer to what seems to us almost an insuperable difficulty.

The proposition is, that the person in communication raises in the somniloquist a state of mind identical with his own: if so, how can conversation be maintained? Will he not supply the answers as well as the questions? And as long as he remains in communication, how can the somniloquist have any thoughts of her own? Or how can she have them at one moment, and not at another when the stream of influence is per-

petual, seeing that it is not under the control of the will, and that the person in communication thinks incessantly? In ordinary circumstances when a question is asked, the person to whom it is put, is left to frame the answer according to the laws of his own mind, and the kind and amount of his own knowledge; but in the case we are considering, nothing is spoken, nor is there any effort made by the person in communication, except that of thinking with energy. When he has done this for a short time, he wishes to know its effect, and then frames and puts the question; but in doing this, his state of mind necessarily changes, and he becomes attentive to the expected answer. Now how does it happen, that this new state of mind is not impressed on that of the somniloquist, like that which immediately preceded it? But if impressed, it must bring hers into the same condition with his own, that is, waiting for a reply, and of course she could not make it: if not impressed, it is certainly an argument against the infusion into her mind of what he first thought over. The alleged ability of the somniloquist to give an account of her consciousness, while the person remains in communication, during which, according to the terms of the case, she has *his* thoughts, is, then, a paradox, and seems to be an absurdity.

I will not, however, dwell on this difficulty, but proceed to state and discuss the subject of intellectual sympathy in as fair and candid a manner as possible.

The proposition is, that when a person is put into communication with one who is in mesmeric somniloquism, a secret agent or influence passes from him, and raises in her perceptions and thoughts identical with his own; the evidence of which is furnished by the answers which she gives to the questions, which are put to her by the mouth through the ear. The point I mean to discuss is, whether, in reference to the report I am reviewing, it is necessary to adopt the theory of a mysterious agency, to account for the true or conformable answers it contains. I shall *assume*, not affirm, that it is not, and proceed to suggest how most of her answers might have

been brought out, according to the established laws of the human mind.

It is an undeniable fact, that a mesmeric somniloquist is not asleep, nor in delirium, insanity or idiotism, but in an extremely passive and quiescent state of mind—not so sluggish and insensible as not to comprehend a question, but too torpid to put forth mental manifestations, without its stimulus. And herein lies the most obvious difference between her intellectual condition and that of a natural somniloquist, who is made to walk and talk, by the quickening impulse on his organs of locomotion and speech, of a dream or a reverie, the essence of which is an excited imagination. What such an one, (the natural somniloquist), sees, is of course the creation of his own mind; what he does is prompted by his dream. The current of his thoughts is strong—too strong, in most cases, to be interrupted, and the individual who happens to get into communication with him, will, in many cases, be compelled to go with the current, or part company; sometimes, however, he may get the mastery, and by his questions and remarks turn the stream of thought into other channels. The mind of the mesmeric somniloquist, like stagnant water, is without this current, but is capable of being excited by external influences, as the pool may be agitated by mechanical force. According to the nature, direction and mode of the action of this force, the undulations and currents established by it will vary; and in the same way, when the external influences, the remarks, and interrogations, which are brought to bear upon the mesmeric somniloquist may vary in their substance or manner, they will raise in her a variety of mental conceptions: stir up her imagination to various creations. Of these creations she is immediately conscious, and her replies express that consciousness. Thus the question itself is what arouses her imagination, and the answer announces, not what existed in her mind by secret infusion previously to his putting the question, but what was created between the time of hearing the interrogatory, and sending forth the reply. Hence the necessity of a lapse of time between the question

and the answer. In the beginning of a conversation this is sometimes to be counted by minutes; but after the image of a particular object is once formed in the mind, the answers concerning its properties and parts, are obtained in more rapid succession; because when the imagination has once decided on the object, the various characteristics of it may be created instantaneously, as in the waking state, and still more in dreams. The chief difficulty lies in getting it to decide. Sometimes, however, this may be instantaneous, because what is said may suggest some object or several, one of which, according to the laws of suggestion will, *instanter*, be adopted. Thus, to come to the facts of the Report, when Mr. C. D. asked, what have I in my hand? a horse, a man, a landscape, a boat, and all other objects not capable of being held in the hand, would be instantly rejected, and the imagination would only have to select out of those which could be grasped. In doing this it would of course choose one that was familiar, because familiar ideas would first come up. Hence, although the somniloquist might have heard of, or occasionally seen, a Hindoo idol, a pine-apple, a pocket-compass, or a silver lancet-case; neither of these objects, under the laws of mental association, could present itself to the exclusion of the objects with which her mind was previously familiar; and hence she answered "a book," and, under a series of questions which did not deny the truth of her answer, described it as such; although what he held and saw, *was* a silver lancet-case. Again. When Mr. I. J., while looking at a book, as a first question, asked her what she saw, she answered "a building;" but when he asked whether he held anything in his hand? she answered something white; and under a series of questions, concerning its properties, at last had the true image raised in her mind, and it seemed to her like a book. Further, when Mr. K. L. asked her to visit England with him, it was not at all probable that after having, in imagination, reached that country, she would on being questioned see a watch in his hand, or the interior of the Mammoth cave, or a group of Indians, but some object, of which she had heard or read, as attracting

the attention of travelers, in that country, and, almost, as a matter of course, her imagination presented her with the image of an old stone church, of a peculiar kind. Further still. When Mr. G. H., without having directed her attention to any foreign place, proposed to take a walk and see fine things, her imagination would not present the scenery or objects of distant lands, nor the people, and drays of the streets of Louisville, but some object belonging to the class of pleasant sights, and it fixed on a large building; and when he asked, what of the top? her imagination was so directed, as to present a spire, the object present in his mind, and quite familiar to her own from being seen every day. Again. When he asked her to cross the mountains with him, it would at once raise in her the idea of objects on that side; of which the most impressive are in its sea-ports, and instead of seeing cotton fields, the ruins of Panama, or a book, she would of necessity, the laws of mental suggestion being in force, see something which belongs to the region where in imagination she had gone; and that something was a building, not very high nor very low, with columns; although the Washington monument, at Baltimore, was in his mind; and when he asked what was to be seen from the top of it, her fancy would not be likely to picture a cat or a snuff box, or a painting, but to create, as it did, a panorama of hills, water and houses. When Mr. C. D. asked her what she saw, she promptly answered a large house, which was correct, and when he inquired, what peculiarity? she answered columns, which was likewise correct. What, at that moment, determined her mind to fix on a building, cannot be known, any more than we can know what suggested to her the same object, while Mr. I. J. was looking at a Hebrew bible, and Mr. G. H. thinking of a human skull. Such answers as the latter relieve us from the necessity of concluding, that Mr. C. D. had sympathetically impressed her with the image of a building; from which we are still further relieved by the fact, that her imagination immediately entered the house which it had created, and consistently presented her with rooms, and persons standing,

walking and sitting; though Mr. C. D., mean while, had, in imagination, descended into the Mammoth cave, and was threading its strange labyrinths. Had he, in thought, gone into the house instead of the cave, her answers would have had such conformity to the topic in his mind, as to favor the idea of a transfusion of ideas, while it would have been but an accidental coincidence. As long as the gentlemen in communication kept themselves in the midst of common scenes and familiar objects, these coincidences would, of course, be frequent; but when they recollected others, of which she was ignorant, her imagination created little or nothing that was applicable to them. Thus, when Mr. C. D. as just mentioned, reproduced in his mind the interior of the cave, as Mr. M. N. before him had done; when Mr. E. F. recollected a steam-boat scene on the Northern Lakes, and a walk on Santa Rosa Island in the Gulf of Mexico; when Mr. O. P. took her into a Rolling mill; when three different gentlemen conducted her to the anatomical lecture-room of the Institute; and when Mr. C. D. ascended the Ohio river in a skiff, on a fowling voyage, she saw nothing that indicated the slightest sympathy with them. The state of mind in which her answers were framed, may be compared to that of young persons in the play—*What are my thoughts like?* The young lady to whom the question is put, if she know nothing of the habits of thought, pursuits or character of him who puts it, exercises her imagination in framing the answer, entirely on her own knowledge, and often finds, as all who have engaged in this intellectual pastime know, not a little difficulty in settling upon any thing. If the gentleman were, at the moment, thinking upon some strange or distant object, of which she knew nothing, her answer would have no relation to it, but if he kept himself within the range of those scenes and objects with which she was intimate, and out of which she must of necessity frame her reply, it would often happen, that she would seem to have apprehended his thoughts.

It is easy on this theory to explain why the somniloquist so often answered, "persons," and "houses," and "water," when

they really made a part of what was recollected by those in communication with her. The first she announced, correctly or incorrectly, about 30 times, and they were embraced about as often in the topics thought over by the gentlemen. The second occurred 24 or 25 times, and were presented about as frequently by those who were in communication with her. Of the third nearly the same might be related. Persons and houses, or buildings and water were, indeed, more common in the subjects chosen for our trials with her, than any others. Now, why did this happen? Undoubtedly, because those objects are so common—because we are social and domestic beings; and in setting our imaginations to selecting or inventing topics, they would naturally, that is according to the laws by which our thoughts are associated, fix on scenes and objects of a familiar kind; and the same would be true of her; for if her ideas had not been governed by the same laws of suggestion as ours, we could not have held conversation with her. Such being the fact, when her drowsy attention was awakened by the question—*what do you see?* her imagination if *it* framed the answer, would of necessity, and for the same reason as in our waking hours, present her with those common objects. And not *only* for the same, but the additional reason, that she, being a woman, had been all her life essentially domestic—residing in the midst of houses and people. It is worthy of remark, that in many of the instances in which the objects just named, made a part of the scenes presented by us, they were not those on which our minds dwelt with *most* intensity, but merely constituted the necessary accompaniments of the scene, or were the actors in some operation which we thought over; but with her, instead of being subordinates, they were principals. Why, however, if her mind had sympathized with ours, should she not have passed *by* the houses and spectators, and spoken of the curious objects and doings, which occupied *our* imaginations? On the theory of her answers being the product of her own imagination, thrown into activity by the questions, this paramount reference to houses and persons is fully explained; while it is ut-

terly incompatible with the hypothesis of transfusion. On the same theory, had she been the somniloquent daughter of an Arab Sheik, she would have seen tents, and horses, and camels, and long beards, for *they* would have been her familiars. Now, if we reduce the number of conformable answers, in which persons, and groups, and water were the objects, and other things, equally or more impressive contained in the groups, were omitted, to their proper level, that is, until they shall bear a due proportion to the rest of her conformable replies, a number of the most correct will be set aside. But on what principle should this be done? I answer, that whenever it is obvious, that other things or operations, must have been equally or more vividly present in the mind of the gentleman, than persons, and houses, and water, but *she* did not see them, her mentioning the latter is no evidence of mental sympathy or transfusion, for if the fainter ideas of the gentleman could be impressed on her mind, his vivid thoughts would much more certainly impress themselves. There seems to me to be no escaping from this conclusion. A few examples may make the argument plainer. We have already seen, that when two gentlemen made their ideal visits with her to the Mammoth cave, she saw houses and people, but she saw nothing in the cave, although its impressive effect on their own minds, at the times of their actual visits, must have enabled them to recall its grotesque alcoves, snow-white stalactites and brilliant torch lights, far more vividly than the boarding-house at the entrance; which interested them no further than as a place of repose and preparation for the thrilling scenes of their subterranean visits. Again: At Colonel Thompson's she saw rooms and people, but why did she not more clearly perceive the blooming green-house, so strikingly contrasted with the desolate winter scenery of the surrounding woods and fields? Again: At the bull-baiting in England, she saw people, but not the object that brought them together, until she was asked if she saw any beasts. Further, when three gentlemen at different times conducted her to the amphitheatre of the Institute, she saw a room and persons,

but did she see the striking objects peculiar to the place? Certainly not; and still it was to show her *them* that she was taken there. When two gentlemen thought over the scenes in the public lecture room, where she had been exhibited, she saw a house and people, but perceived nothing of the operations which were recalled by them. Finally, when conducted to the church in Cincinnati, she spoke of a house and people, but saw nothing of the picturesque and impressive ceremony, which made the essential part of the scene. These cases might be greatly multiplied, and it seems to me that a sound philosophical logic rejects them all, as instances of the transfusion of ideas into her mind. If not, it follows, that she sympathizes more with the weaker than the stronger recollections of the person in communication, which is equivalent to saying that the feeble is more powerful than the strong—the less superior to the greater—a part larger than the whole.

According to the views which I have presented, the questions put to her, both occasion the creations of her own imagination, which are what she sees, and call forth an expression of them in her answers. I wish the reader not to lose sight of this proposition, but, remembering it, to proceed with the me still further, in the inquiry how far, as a theory, it will explain the facts before us.

All our intercourse with her convinced us, that she was in a drowsy, inert, and feeble state of mind, especially in its reasoning faculties, or else affected it. We have assumed the former. Now, to such a mind, the stimulus of a question is like a galvanic shock to one apparently dead, which excites a momentary, convulsive and irregular action of the muscles. The weaker and more quiescent the mind, the greater is the power of another mind over it; when exerted in the common manner of remark, command or interrogation—in other words, the more will it be directed and moulded:—The less its inherent energy, the more will it be indebted to external influences for its activity; and the more will that activity take its coloring, form and character from

those influences. That *her* mind was susceptible of being thus influenced, is evident from many parts of the record, and is a fact admitted by all who have conversed with her. But I need not rely exclusively on the late experiments for proof, that the question, and even the manner of expressing it, as well as the previous remark, will influence the reply; for in the Western Journal for June, 1842, there is a report of a series of experiments on corporeal sympathy, made in Cincinnati, in the presence of many respectable witnesses, which conclusively shows, that by varying the questions, or introducing them with different prefatory remarks, the same water and the same bread and meat, were made to have, respectively, many different tastes, and to be a variety of things, according to the varying creations of the imagination of the somniloquist. Such results would seem to show conclusively, that the answers do not express the ideas of the person in communication, secretly imparted, but the *effects* of *his* conversation and questions on *her own* imagination. The things seen by her are inherent—not transfused. She is *acted on by*, but does not *sympathize with* her companion. She sees what she would not see but for his influence; but she does not see what he sees, except by accidental coincidence, or except his questions or remarks be so framed, as to cause her imagination to bring forth the likeness of what is in his mind. That this may be done in the waking state, any two individuals may satisfy themselves by experiments of the kind made on her; but if practicable in that state, it may, *a fortiori*, be done in the mesmeric slumber, when the judgment is inert, the will nearly annihilated, and the external senses inattentive; when she is acted on, it is said, by no voice but that of her companion, and, as far as observation instructs us, has no mental activity but what his voice inspires.

If this theory be correct, it follows as a consequence, that a mesmerised somniloquist, may, by a protracted and skilful course of interrogation, be made to see almost any object which the person in conversation may choose to select; and this we may presume is the key to the striking results which

are often obtained in public exhibitions. Those who engage in these exercises, although unskilful in conducting a course of interrogation, designed to reveal the true character of the mental state of the somniloquist, are instinctively qualified to bring out striking results. They feel, that courtesy and fairness require, that they should, by their questions, not mislead the somniloquist, but rather afford her some general intimation of the locality or nature of the scene or object they have in view; which intimation being given, and followed by questions on the details, they set her imagination to work within the prescribed field, and at last are astonished at the creations, which, under their own dictation, it presents to them—creations that sometimes even go in advance of their own minds, which come in turn to be led by the somniloquist. An examiner of this kind, is in the condition of a man, who, in a dead calm, might approach an Æolian harp, to hear its whispering melody, and mistake the music struck out by his own breathings on its strings, for that of breezes, too gentle, as he would believe, to be perceived.

A comparison of the instances in which the same scene or object was, more than once thought over by some of us, while in communication with the somniloquist, gives results at utter variance with the hypothesis of transfusion, but in harmony with that of interrogation. It will be seen by reference to the Report that Nos. 2 and 9, Nos. 4 and 21, Nos. 6 and 36, Nos. 12, 13 and 14, Nos. 15 and 16, Nos. 19, 40 and 50, Nos. 37 and 45, Nos. 38 and 46, and Nos. 39 and 47, were respectively the same topics; and on the hypothesis of mental sympathy, her account of each, as given to different gentlemen, or to the same at different times, should have been substantially the same. An examination of her answers under those different heads shows nothing of the kind. On the contrary, it is obvious at the first glance, that in all these cases, her own imagination created her answers. This may be affirmed with the more confidence from the fact, that these were not trials to see if she would answer in the same way, when questioned by different persons concerning the same

scenes, for the fact of gentlemen having selected the same, was not known even to themselves, till the experiments were completed. Of the whole, certainly none are more important than these, which are not unlike the cross examination of a witness in court, or the *experimentum crucis* of the philosophers. They rest as a dead weight on the hypothesis of mental sympathy, but give a living support to the theory of interrogative stimulation.

There are other ascertained and admitted facts, which have the same bearing, two of which occur to me at this moment. One is, that the alleged mental transfusion is interrupted when the visiter, in communication, puts his question; but this could not be the case if the question did not modify the state of her mind; the other is, that by cross questioning, her mind may be misled and confused, so that she loses the whole or a part of what has been said to be transfused, and, therefore, gives vague or erroneous answers. Now what is all this, but to elevate interrogation over transfusion, as a means of securing her attention and creating new states of mind? But if interrogation have in it this paramount power, why not deduce from it all the results, seeing that it *may* be so conducted as to direct the attention and guide the imagination, even in the waking state? A cause adequate to the production of a phenomenon being discovered, it is not only superfluous but unphilosophical to look for another. It is even absurd, if that assigned be a reality, and one which the mind can appreciate, to propose another that is at once hypothetical and incomprehensible. But I must not dismiss the subject of interrogation here. It is asserted by observers of the phenomena of mesmeric somniloquism, that persons in communication, who are dull and unimpressive in their mode of interrogating, do not obtain as lively and proper answers, as those who put their questions with animation, and occasionally enliven the somniloquist with sprightly or mirthful sallies. Now from the phenomena of natural somniloquism, as well as from reasoning on the subject, I would say, that in proportion as these measures might awaken her imagination and

give it impulse, the reception of transfused ideas would be resisted, and the phenomena depending on mental sympathy with her companion, diminished. But, on the theory we are supporting—that all she gives out is of home manufacture—the more her imagination might be aroused by conversation, the brighter and better would be its creations, and the more definite her replies. Moreover, it does not follow, that he who puts his questions in a feeble and frigid manner, has inert feelings or a dull imagination—but rather the reverse; as intense effort in the reproduction of a scene is unfavorable to earnestness and playfulness of expression. To say, indeed, that lively questioning is necessary to procure lively responses, seems an abandonment of the theory of transfusion, which should be great in proportion to the intensity of thought—not the energy of speech; but on the theory we advocate, intensity of thought is unnecessary—sprightliness of interrogation everything.

It may be said, that in several instances during our recent experiments, and at other times and with other somniloquists, there have been prompt answers as to individual objects, which were correct. This is true, but the conclusion from it is, logically, false; for first, the objects concerning which she answered correctly, without a course of previous questioning, were scarcely any others, than "buildings," "people," "water," and "something moving;" which she was perpetually announcing; and second, in an equal number of times, her first answers were incorrect. It may be said, however, that the latter were mistakes. But does not their occurrence prove, that answers *were* given by her in opposition to the state of mind of the gentleman in communication with her? and is not this at variance with the hypothesis of transfusion? She could not answer a "book," a "building," "people," or "water," unless the idea of it were present in her mind. But if it were not in the mind of her companion, at the time, it could not have been transfused, but must have been created by her own imagination. Here then we see that in the very midst of the alleged transfusion of the ideas relating to one object, her own imagination created the image of another.

Now it is according to all human experience, that *some* of these creations should by accident be true to what was in the mind of her companion. If while writing this paragraph, I should ask a blind man which I was using, the quill of a goose, a swan, a turkey, a vulture or an eagle, he might anwer the first and be correct, but would that prove that he saw it? Certainly not. He was limited in his choice to the five, and, therefore, the chances against a successful answer, were not indefinitely great. But his knowledge of the common use of the first, or its being the first named, might in his judgment have rendered it probable that I was writing with it. The somniloquist might not exercise this judgment, when asked what I held in my hand, but, in framing an answer, she must of necessity fix on some object of a familiar kind, commonly held in the hand, which might or might not be the true one. If the blind man had known, that I made an equal use of the five kinds of quills, his first thought would probably have been of the one which had been most used by himself; and thus, the somniloquist, when asked "what have I in my hand?" necessarily thinks first (as I have already shown) of some familiar object: and having, in her torpid condition, no power of the understanding to inquire into the probability of the answer, gives it out in full confidence of its being right, although it *may* be either right or wrong. She believes it correct, because there is nothing in her somnolent judgment to oppose her conclusion. In this respect her state of mind is identical with that of a madman, who has full faith in the creations of his distempered imagination, because he is incapable of comparing them with anything else —cannot subject them to the test of his senses or his reason. Yet his creations of fancy might be according to the reality, as, for example, that his house was surrounded by robbers, when it really was; but no sound mind would believe from the coincidence, that he had been mysteriously informed of the fact, by sympathy with another mind. I cannot but believe, then, that logic supplies a lever with which to overturn that superstructure of faith in transfusion, which has been erected

on the occasional coincidences which our report furnishes. In the nature of things they must have occurred.

If mental sympathy really existed in the mesmeric state, we ought to hear of exercises of the thinking faculties, by some of these somniloquists, but nothing of the kind has, I believe, been exhibited. All the phenomena depend on the imagination. We hear little or nothing of mathematical solutions, philosophical inductions, or geographical relations. Contrarieties and discrepancies of all kinds are entirely overlooked. Harmonies are neither produced, sought after nor missed by the somniloquist. There is no abstraction, no generalization; and the whole mental performance is but the creation and exhibition of a series of phantasmagorial pictures, or rather of their imperfect, shapeless and uncombinable elements.

And this leads me to speak of the relations of the imagination with the sense of vision. In our experiments, no allusion was made to sensations in the organs of touch, taste or smell, and but three or four times to those of hearing, and then, generally, in consequence of a leading question; and with the simple enunciation of sound, without applying to it any epithets expressive of its melody or harmony. In fact, almost every idea awakened in her was visual, which is precisely what would happen if her *own* imagination supplied the objects of her consciousness; while if the feelings and thoughts of the person in communication were transfused, I can see no possible reason, why manifestations should not have been made of the perceptions received through the other senses. It is a well known fact, that the sense of vision supplies the imagination with its principal materials. Hence all poetry, except the didactic and pathetic, abounds in visual ideas, which, moreover, enter largely into the tropes and metaphors of the kinds I have mentioned as partial exceptions. The vividness of the ideas obtained through the eye, is, moreover, very great, and so attractive to our attention over those of the other external senses, that we speak of seeing, as synonimous with examination by means of all the other sentient organs. This popular phraseology shows the experience of the world, in regard to

the superiority of this sense. The sensations of the eye, moreover, are not only impressive at the moment, but abide with us; and after some time, are almost the only ones we can revive. Thus, many years after having discovered a new plant, we are able to recall the appearance of its flowers, and that of the wild scenery where it grew, much more vividly than its odour, the feel of its leaves, the taste of its bark, or the song of the birds in the surrounding trees. Indeed, until we recall the visible appearance of an object, it does not seem to be present in the mind; but when once reinstated, as an object of sight, its qualities and properties, as ascertained by our other senses, are gradually, though much more faintly reproduced. Thus it is, that the magazines of the mind are almost filled with visual perceptions, and the imagination is not only the keeper of the key, but the artist which weaves them into tissues. Almost all its creations, therefore, necessarily address themselves to the "mind's eye," not to its ear. In general these reproductions cannot be mistaken for present impressions on the nerves of vision, for two reasons; 1st. The exercise of the other senses assures the individual, that what he sees is external to him; 2d. In the absence of the opportunity of thus exercising his senses, he can reason on the visual presentation, and decide upon its character. But when neither of these correctives, or opposing influences operates, it becomes *inevitable*, that the image or picture created by the imagination is regarded as a reality of sense, and of course referred to the eye. But it is not necessary even to this result, that the counteracting influence of external sensation or the exercise of judgment should be impaired, for a mere increase in the energy and activity of the imagination may produce pictures of such vividness, as to impose on the consciousness of the individual, in spite of his reason and his external sensations. More commonly, however, the effect is produced by the combined influence of exaltation in the former, and depression in the two latter. Thus a maniac from drink has an excited imagination, and enfeebled organs of sense, in which state he has many strange visions. But the best illustration is found

in ghost-seeing. Darkness excites the imagination, while it impairs external vision, under which combination the spectre created by the former is referred, by the consciousness of the individual, to the eye, and made a reality. An application of the whole of what has been here said, may, in a single sentence, be made to the sight-seeing of the mesmeric somniloquist, in whom external sensation, except that of hearing which is limited (we are told) to the person in communication, is suspended, and the reasoning powers are almost torpid. In this condition her attention is aroused by a question, and the imagination, which sometimes nods but never sleeps, supplies the reply, out of visual perceptions, which her dreaming consciousness refers to the eye, and calls it seeing. Indeed, all the answers and remarks of the somniloquist on whom the recent experiments were made, show, that she regarded herself as seeing; but on the theory we are seeking to illustrate, she could no more be conscious that she saw only the works of her own imagination, than the ordinary somnambulist, or the madman from drink, or the superstitious and frightened girl in the darkness of night, is conscious, that what the imagination presents has no existence without.

These views enable us to explain several circumstances, which are said, by those who are familiar with mesmeric exhibitions, to be realities. One is, that some individuals in the somniloquent state have very little mental sympathy. They will either give no intelligible answers, or such as relate chiefly to the body. Now, in the former case, the imagination is no doubt naturally dull, and will not, therefore, embody ideas into intellectually visible forms; but if the phenomena depended on transfusion of ideas from another mind, I can see no reason why they should not appear, as it is easier for water to run into the earth if dry, than wet. In the latter case, when the answers relate chiefly to the body, and the individual is said to have corporeal but not mental sympathy, the case may, I think, be explained in this manner. His existence has been more physical than mental; and his thoughts, his knowledge, and his previous exercises of imagination, have related chiefly,

in past times, to the wants and pleasures of the body. Now when such an one, in mesmeric somniloquism, is excited by questions, his imagination does not—cannot I might say—embody ideas, which relate to other objects than those which have administered to his physical enjoyments; and will, therefore, supply him with answers which relate to the body, rather than the mind—by which he will soon become characterized as deficient in mental, but great in bodily, sympathy.

In connexion with this part of our subject, I may refer to what has been so often affirmed, that mesmeric somniloquists seem to be free from all impure thoughts and feelings. This cannot be explained on the hypothesis of transfusion or mental sympathy, but gives support to the opposing theory. The connexion of the imagination with the sentiments and emotions of the soul, is more intimate than with the grosser propensities of the body, and hence, when the chief excitement is in the imagination, the moral feelings are more awakened by its exercises than the animal, and an aspect of mildness, propriety and purity shines forth.

Much has been said on the brilliancy of the intellectual manifestations, which it is alledged are sometimes made by mesmeric somniloquists. I am aware that natural somniloquists have made such displays; and am therefore willing to grant that means of eliciting them from the mesmeric somniloquist may be discovered, as the two states are closely analogous. I must say, however, that in all which the subject of our experiments uttered, nothing of the kind was elicited; but every answer and remark indicated the vacant and languid state of mind, of which I have spoken. But suppose such manifestations should be made, must we necessarily believe them transfused from another mind—mere reflections? Certainly not; seeing that in natural somniloquism, they are the *creations* of the mind of the somniloquist, whose *waking* mental manifestations they often surpass. But if they can come forth as original, not reflected manifestations, from the natural somniloquist, why *may* they not have the same origin in the mesmeric?—Indeed, from the close resemblance of the two, a sound

philosophical logic requires us to believe, that the two mental displays have in fact the same origin. But this conclusion excludes the theory of transfusion, which would make the striking displays of the mesmeric somniloquist but the reflected light of a brilliant mind in communication with her own. If this latter were the case, her manifestations should, in their force, bear a relation to the brilliancy of mind of her companion, which seems *not* to be the case; it is affirmed however that they *do* bear a relation to the force and sprightliness of his conversation, indicating that his exciting influence reaches her through the ear. On neither theory can I see room for any extraordinary exhibitions, or a ground for great expectation. On that of transfusion and reflection, nothing can come forth of greater excellence than what is in the transfusing mind, for the amount of light reflected can never exceed that which falls on the reflecting surface; and is not likely to be equal, as some will be absorbed and some refracted. It is a delusion then, if transfusion be true, to expect anything more remarkable than what has been witnessed. On the theory of excitation by the stimulus of questions, I know not that we are warranted in looking for brighter manifestations than have yet been made; but as we cannot foresee to what extent the creative energy of the somniloquist's imagination may be excited by external influence, the theory of interrogative agitation seems to hold out a greater prospect of *original* manifestations than the other; which, indeed, can afford *no* promise whatever of anything original; nor, until the stream can rise higher than the fountain, of anything superior to what is in the transfusing mind.

I cannot refrain from calling attention to the question, how far a mesmeric somniloquist may be educated. We know that in cases of prolonged somniloquism, constituting a kind of double consciousness, in which the paroxysm lasts for several weeks, the subject learns things which in the lucid or sane interval, that follows, are not remembered; but which return in the next somniloquent paroxysm. The same is true of the mesmeric somniloquist on whom our experiments were

made. In the presence of several of us, she displayed a personal knowledge of a gentleman who had often been introduced to her, recognized his watch and was fond of handling it. She also recollected her imaginary visit to England with one of our own number, and remembered not only what (it has been assumed) was communicated to her by transfusion, as the seeing of a strange beast; but also what the gentleman said to her in words, as for example, his proposal to visit England and his father's house. Now, if the knowledge acquired in the somniloquent state, or the images and imagery raised in the mind by questionings and conversation, remain with her, (and if she remember from one paroxysm to another, it may be concluded that she remembers much longer,) it follows, that after a time her somniloquent memory will become filled with a great variety; and that she will improve in her conversational powers, especially on certain subjects, those upon which the questions put to her oftenest turn her imagination; and when, at a subsequent time, a question happens to awaken the recollection of an object or group formerly presented to her, she may immediately describe it. In this way, if any one should happen by a question to revive in her mind the falls of Niagara, or the interior of a steam boat, the conception of which had ever been raised by the force of leading questions (to which all somniloquists are known to be amenable) she might instantly give out the scene; and if any one had ever, by interrogation skilfully directed, caused her to imagine, that is, see, a man with one arm only, an inquiry about the arms of a man, might immediately embody to her consciousness that which had long slept. Or, if some one should in a remark of his use the word beast, although he did not intend to present an animal to her view, it might forthwith revive the conception of the strange beast, which she saw in her visit to England. And if an individual, introduced to her a second time, should be recognised and fully remembered by her, his questions might bring up, as recollections, the scenes which had been raised in her mind at the previous interview; although his own might be now in a different state from what

it was then. All this is apt to happen in the waking state, as the meeting with an old school fellow revives the memory of events that might not have been recollected for half a century.—Unless she had her ideas associated according to the same laws with our own, we could not have conversed with her—having them so associated, all that I here insist upon seems inevitable.

As further evidence of her being docile, when in the somniloquent state, I may mention her practising with music-teachers and amateurs, before performing with them in public exhibitions; and her telling a lady who had sung with her, that she wished to sing with her again, because she pronounced the words so distinctly. Notwithstanding this evidence that she followed the voice, it is believed by many intelligent persons, that she both sings and reads with others, by mental sympathy. It seems strange, that before coming to a conclusion on this point, the experiment had not been made, of introducing the singer and reader, by their arms being thrust through a partition. If she should sing and read, simultaneously, with them, in such an experiment, when she could not hear their voices, the sympathy of her mind with theirs would be established.

The mode of introducing, or putting a person in communication with the somniloquist, is incompatible with the hypothesis of a material agent, by means of which the transmigration of ideas takes place. Thus the practice at present is, for the mesmerizer to place the hand of the visitor in that of the somniloquist, and then perform on both certain manipulations; still it is not requisite that it should be the hand of the person announced; any other hand will do equally as well. It is only necessary that the somniloquist feel a hand and hear a name, to secure her attention—to make her conscious of the companionship. The hand of one may be grasped by her—the name of another pronounced, when she will immediately answer the question of the latter. This fact has been established as conclusively, both in Cincinnati and Louisville, as any fact can be, and the inference to which it irresistibly

leads, is that no physical agent is the efficient cause of the mental intercourse between them, but that it takes place through the ordinary *media* of the external senses and the organs of speech, hearing, and touch. The introduction may even be effected without joining hands, but more easily by it; the reason for which manifestly is, that the attention of the somniloquist is more awakened and specifically directed, when her sense of touch as well as of hearing is appealed to, than when the latter only is addressed. It is well known, moreover, that after having been several times in conversation with a somniloquist, the visitor may introduce himself;—that is, he has become an acquaintance—a familiar—a friend: his voice and touch are perceived, and he is recognized. All this would seem to indicate that the process of social intercourse with the somniloquist is not physical but psychological—not occult but open—not through the vibrations or the transmitting power of a hypothetical, undiscovered etherial fluid; but through the *ordinary media* of air and light, assisted by appropriate impressions on the nerves of feeling. This conclusion concerning the nature of the introduction to a somniloquist, at such utter variance wi h the hypothesis of the transfusion of the thoughts and feelings of another through an unknown channel, is in perfect harmony with the theory of interrogation.

The measures employed, at various periods, to excite the mesmeric state, deserve to be mentioned, as lending no support to the hypothesis of a specific agent, emanating from the Mesmerizer. Those at first employed were entirely different from the present. They were not personal but instrumental. An iron pot, magnets, rods, and ropes with which the subjects were bound together, then constituted the apparatus of a mesmerizer; to these succeeded a complex system of passes with the hand, and other manipulations, all instruments being thrown aside; now, the eye performs, or may perform, the whole; and that too, without anything being radiated from it to the subject, for Faria, one of the oldest and most scientific mesmerizers of Europe, expressly declares, that it is not ne-

cessary to make any effort of the will—it is only requisite to make the subject *believe* that such an effort is made, and the somniloquent state occurs. A learned and venerable mesmeric philosopher, of this city, informs me, that he has put a boy into somniloquism, by merely looking at him, when they were ten feet apart. It is quite obvious, that such an effect could only have been produced through the influence of the imagination and feelings.

In conclusion, the variety of aspects which the phenomena of mesmerism have exhibited, deserve to be regarded in connexion with the hypothesis of a specific agent or influence as producing them. The phenomena of the known agencies of nature, such as light, caloric, and electricity, are invariable. Science multiplies them to our observation, but the new do not supersede the old—they are cumulative, and every succeeding year swells the aggregate. Time exerts on the phenomena of mesmerism a very different influence. There is change but no cumulation, progression without aggregation—the snowball rolls on, but melts at the sametime and grows no larger. The soil does not annually bring forth a more abundant harvest as it becomes more thoroughly impregnated with the same seeds, but a new plant supersedes the old, to be in turn displaced by another. The first phenomena of mesmerism, consisted chiefly in various agitations of the muscular system—in spasms, hysteria, syncope, coughs and vomiting; to these succeeded somniloquism, with a vision so quickened, that the individual could see deeper into a mill-stone than he who picks it:—a *clairvoyance* of the eye, which could discover what was then transacting in distant places; a *clairvoyance* of the mind, that enabled the somniloquist to penetrate the arcana of science; a *prevoyance* that could perceive the shadows of coming events, when other eyes could descry nothing! But this brilliant coruscation on the face of humanity, like a meteor of the heavens, soon passed away,—and is now succeeded by the phenomena of metempsychosis. From a state of beatific inspiration, the devoted somniloquist is degraded to the condition of a mere

passive and unresisting recipient of the thoughts, feelings and will of those in communication. Her ideas are no longer her own;—she is compelled to feel what others feel;—she cannot move but at their bidding. The barriers of her mind are broken down, and "blue spirits and black, white spirits and gray," enter without opposition, and revel in its mansions without molestation. Her personal consciousness has become a *tertium quid*, composed of her own and that of another united. She is transformed into a spiritual hybrid, and loses her accountability both to God and man, as the laws of neither recognize such personality.

Louisville, Feb. 10, 1844.

ART. II.—*A Case in which the application of a small quantity of Strychnia was followed by unpleasant effects.* By W. L. SUTTON, M.D., of Georgetown, Ky.

Mr. Davis, apothecary of this place, in weighing strychnine, dropped a little on his finger which, at the time, happened to be moist. He wiped it off carelessly, but in the course of an hour his hand and arm began to swell and feel numb. The swelling of the hand and fore arm was very considerable, attended by loss of sensation, (but not of motion), and severe pain in the shoulder. He used sinapisms and free friction with ammoniated liniment to the arm, and took morphia and spirits of ammonia internally. Next morning the swelling was gone, but he continued to feel slight shooting pains in his hand for some days, and even yet, he feels some occasionally. A depression took place in the bulb of the finger, and still continues. It has very much the appearance, as if produced by a condensation of the cellular substance beneath the skin. On two previous occasions he had felt slight pains from dropping some of the same article on his hand. He knew a similar effect in one of his friends. I will add, that I have heard that a man in Fayette county, whilst preparing some strychnine to poison crows, dropped

some on an ulcer upon his hand, which caused his death in a few hours. I can say nothing as to the truth of this report. It is evident that certain persons have a peculiar susceptibility to its influence, as Mr. Davis thinks not more than the fifteenth part of a grain could have fallen upon his finger. This may suggest a caution in applying this article to denuded surfaces, seeing that so minute a quantity, upon the thick skin on the bulb of the finger, may be followed by distressing effects.

February, 1844.

REVIEWS.

ART III.—*Recherches sur la Fréquence des Hernies, selon les Sexes, les Ages, et relativement à la Population.* Par J. F. MALGAIGNE, Professeur agrégé de la Faculté de Medicine de Paris, Chirurgien de l'Hospice de Bicêtre.

Inquiries into the Frequency of Hernia, according to Sex and Age, and in relation to Population. By J. F. MALGAIGNE, &c. From the *Annales d'Hygiéne Publique et de Médecine Légale*, Vol. xxiv, 1840.

Accident having directed our attention to this article a few days ago, a hasty perusal of it led us to believe that an analysis would be acceptable to the readers of the Journal. The paper being in itself an analytical one, the subject will thus have undergone a sort of double distillation after passing through our alembic, and hence to readers of *refined* taste must prove agreeable. At all events, as remarked by the author, if the question considered here be not one of that kind which leads to important practical results, it still offers so much interest that most writers upon hernia have attempted its solution.

The data upon which some of the writers upon this subject have founded their conclusions, are exceedingly vague;

and the results obtained by others, who have attempted to solve the problem by figures, are always doubtful, and indeed generally contradictory. Arnauld, for instance, says that of males, at least one-eighth are affected with hernia, but he offers no proof of it; others have carried the proportion to one-eighth of the total population. Bordenave opposes strongly such an exaggeration, and fearlessly asserts that the proportion does not amount to one in a hundred. Louis, not content with assertions, made inquiries at the hospitals Saltpétriére, Bicêtre, and Pitié, and that for Invalids, and found that children were affected in the proportion of 1-50th, women 1:32, adults and old men 1-17th to 1-18th; results as different from the assertion of Bordenave as from that of Arnauld. Juville advances the idea that in Germany and the north of Europe, the proportion for men is 1-30th and more; in Italy and Spain, 1-15th; in France and England, more than 1-20th. Turnbull, in England, says, on the authority of researches carefully made in all the kingdom, that the individuals affected with hernia constitute 1-15th of the population. Lawrence thinks the statement manifestly exaggerated. Sheldrake goes still further, and makes the proportion 1-10th.

Knox, some years since, discussed this question in a special work, and although he has not expressed his opinion clearly, it is evident that he regards hernia as infinitely more rare than most authors do, and coincides very nearly with Bordenave. He rests his conviction on the following facts: 1. The statement in Monroe's work of the examination of recruits for the German legion by Versturme and others, which gives less than 1 in the 100. 2. Examination of 6229 recruits, by Marshall, from December, 1824, to December, 1825, giving a proportion of 1 in 76. 3. Two tables of recruits examined at the Dublin depôt—one of 4012 individuals, which furnished 18 ruptures, another of 2588 which gave 16; these tables united with that of Marshall, show that subjects with rupture do not form 1-100th of the total number. 4. Eighty-six individuals carefully examined after death, by himself, and

only one with rupture found. 5. The last and principal argument is drawn from results of the draughts for the French army in 1831, '32 and '33, which show for the whole number 1.3 for every 100.

Finally, Marshall himself, makes a computation from the register of recruits at Dublin for the British army: the first table embraces 20 years, and gives a proportion of 1:50; a second embracing 23 years, of 1:48.

These calculations and results, besides being contradictory, are radically defective. They refer to a peculiar population, chosen from hospitals or the army, which must exhibit different proportions from the ordinary population; nor are the differences in the frequency of hernia, arising from sex and age, taken into consideration.

"The preliminary conditions, then, to be fulfilled in order to solve this difficult problem are: 1. To act upon the ordinary population without distinction and without choice. 2. To find the precise ratio of hernia in the two sexes. 3. To seek the different proportions of hernia at the different periods of life, and from all these combined, to deduce the general ratio."

The *bureau central* of the Parisian hospitals, Malgaigne says, fills the first condition, inasmuch as individuals of both sexes and of all ages, indiscriminately, apply there for trusses. But it may be objected to observations collected here, that they relate to paupers, or to a population bordering on indigence, and that it is not yet ascertained that the same law of production obtains among the wealthier classes. Laying aside, for the time, this question, the importance of which is acknowledged, and supposing that the persons submitted to his observation represent the entire population, he endeavors to establish

1. *The comparative frequency of hernia in the two sexes.*— The first tables of a suitable character to determine this question, are those of Louis, already referred to, from which it may almost be concluded that there are two males affected with hernia for one female, "a proportion truly extraordinary." These

and the results obtained by others, who have attempted to solve the problem by figures, are always doubtful, and indeed generally contradictory. Arnauld, for instance, says that of males, at least one-eighth are affected with hernia, but he offers no proof of it; others have carried the proportion to one-eighth of the total population. Bordenave opposes strongly such an exaggeration, and fearlessly asserts that the proportion does not amount to one in a hundred. Louis, not content with assertions, made inquiries at the hospitals Saltpétriére, Bicêtre, and Pitié, and that for Invalids, and found that children were affected in the proportion of 1-50th, women 1:32, adults and old men 1-17th to 1-18th; results as different from the assertion of Bordenave as from that of Arnauld. Juville advances the idea that in Germany and the north of Europe, the proportion for men is 1-30th and more; in Italy and Spain, 1-15th; in France and England, more than 1-20th. Turnbull, in England, says, on the authority of researches carefully made in all the kingdom, that the individuals affected with hernia constitute 1-15th of the population. Lawrence thinks the statement manifestly exaggerated. Sheldrake goes still further, and makes the proportion 1-10th.

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"The preliminary conditions, then, to be fulfilled in order to solve this difficult problem are: 1. To act upon the ordinary population without distinction and without choice. 2. To find the precise ratio of hernia in the two sexes. 3. To seek the different proportions of hernia at the different periods of life, and from all these combined, to deduce the general ratio."

The *bureau central* of the Parisian hospitals, Malgaigne says, fills the first condition, inasmuch as individuals of both sexes and of all ages, indiscriminately, apply there for trusses. But it may be objected to observations collected here, that they relate to paupers, or to a population bordering on indigence, and that it is not yet ascertained that the same law of production obtains among the wealthier classes. Laying aside, for the time, this question, the importance of which is acknowledged, and supposing that the persons submitted to his observation represent the entire population, he endeavors to establish

1. *The comparative frequency of hernia in the two sexes.*— The first tables of a suitable character to determine this question, are those of Louis, already referred to, from which it may almost be concluded that there are two males affected with hernia for one female, "a proportion truly extraordinary." These

ruptures, however, were observed chiefly among the aged, and there are in fact, as will be seen presently, certain periods of life in which the frequency of hernia among females, brings the proportion pretty near that just stated.

But taking the entire population, as do the bandagists and chiefs of public establishments, the number of males is seen to increase considerably, and that of females to diminish. Monnikoff of Amsterdam has drawn up a table, which gives a proportion nearly of three males to one female (2.81 to 1); Mathey, of Anvers, another which gives 4 to 1; the statement of the old London Truss Society (up to 1814*) as published by Lawrence, furnishes about 6 to 1, the new society a little more than 6 to 1. There is nothing to show whether these tables have have been properly sifted; whether, for example, care has been taken to remove all those who were served twice, a thing which happens more frequently with men than women, as the latter do not wear out their trusses so quickly. Knox, moreover, observes that men submit more willingly to an examination, an important circumstance, especially in England, and one which must alter the real ratio of hernia in the two sexes.

As this last source of error scarcely exists at Paris, among the poor especially, the true proportion may be more easily obtained. The first observations collected by Malgaigne at the bureau central (October and November, 1835) amounted to 410 only: 335 males, 75 females; showing a proportion of 4½ to 1, which is the mean between that of Monnikoff and the English writers, and approaches the result obtained by Mathey of Anvers. But this number appearing too small to decide the question, especially in comparison with the numbers of Monnikoff and the London Societies, he collected the total number that presented themselves, at the same place, in 1836,

* In the last (5th) edition of Lawrence's Treatise, this report is brought up to 1835. The society, since it was first instituted, a period of 28 years, had afforded relief to 83.584 persons, of whom 67.798 were males, and 15.786 females. But this includes numerous cases of anal, uterine, vaginal and vesical prolapse. Subtracting these leaves

Whole number,	80.492.
Males,	67.346.
Females,	13.146.

A proportion of about 5 (5.12) to 1.

C.

and eliminating all who had applied twice and thrice, and all of the females who applied for pessaries only, found the whole number to be 2,767; *i. e.* 2,203 males, 564 females, giving a proportion something less than 4 (3.91) to 1. He repeated the same thing for 1837, and eliminating as before the cases of vaginal prolapse, and taking care to include none of the cases of the year preceding, found a total of 2,373, or 1,884 males, 489 females, a proportion still a little less than 4 to 1 (3.89 to 1.)

"This second result approaches so near the first that chance doubtless comes in for something; and it is not probable that a third series would give a proportion differing 0.02 only from the preceding. But we may at least presume that it would not deviate very greatly from it; so that we have sufficient reasons to conclude, that for Paris at least, and among the lower classes, about 4 subjects with hernia may be counted among males for 1 among females."

2. Our author next considers *the comparative frequency of hernia according to age.*

The only document bearing upon this branch of the subject, is that emanating from the Old London Truss Society, given by Lawrence, and to which reference has already been made. This presents some striking analogies with the tables subsequently given by our author, but is liable to so many objections on the score of accuracy that he makes no use of it. The 410 observations collected by himself during two months of 1835, after being disposed according to sex and age, furnish so small a number for each period of life that he attaches but little importance to it; this table we shall omit, although the author occasionally refers to it. But in the following table we have the cases collected in 1836 and 1837, arranged according to sex and age; this he thinks "worthy to fix the attention," and upon it, "he relies with some confidence."

AGE OF SUBJECTS.	1836.			1837.		
	MALES.	FEMALES.	TOTAL.	MALES.	FEMALES.	TOTAL.
From birth to 1 year.	48	7	55	30	8	38
From 1 to 2 years.	16	7	23	29	7	36
2 "	18	4	22	14	2	18
3 "	11	4	15	9	1	10
4 "	9	0	9	9	4	13
From 5 to 13 "	53	12	65	45	6	51
" 13 to 20 "	83	8	91	76	7	83
" 20 to 28 "	118	17	135	108	23	131
" 28 to 30 "	47	9	56	33	12	45
" 30 to 35 "	119	26	145	112	28	130
" 35 to 40 "	237	53	290	181	47	228
" 40 to 50 "	410	131	541	312	111	423
" 50 to 60 "	457	118	575	385	98	483
" 60 to 70 "	367	119	486	324	100	424
" 70 to 75 "	133	31	164	132	18	150
" 75 to 80 "	62	13	75	65	15	80
" 80 and upwards.	15	5	20	20	2	22

We must now let the author speak for himself; the dependence becomes too close for analysis:

"I have taken care to distribute the cases of hernia according to the periods that appeared to offer marked differences with those preceding and those following. Above all, it was interesting to know in what proportions the subjects with rupture occurred during the first year. In 1836, I find 55 out of 2,767, or 1:50; in 1837, 38 out of 2,373, or 1:62; mean term 1:56. If we confine ourselves to the males, the proportion will be, for the former year, 1:46, for the second, 1:62, as for the two sexes united; mean term 1:54.

"In children from one to two years of age, the number falls perceptibly for our first series; it continues almost the same for the second. But for the succeeding epochs of 2, 3 and 4 years, the diminution is flagrant and unquestionable; still, to the mass furnished by the first year, add those produced during the second, third and fourth; and if it be true that death decimates largely the population at these ages, it by no means produces such a diminution as we see occurring in this small *hernious* population. Do the radical cures thus reduce the number? These cures are not so common, or so rapid, especially with the trusses furnished by pub-

lic charities, badly applied by their officers, and worse still by the parents. Is the mortality greater among subjects with hernia than among others? The question is one of high importance both in reference to practical surgery and public hygien, but which cannot now be answered.

"In the eight succeeding years, from 5 to 13, the decrease continues: the mean for each year is 8 for 1836, 6 for 1837, a remarkable agreement, which will be found, moreover, for nearly every period. It seems also that in these eight years, it is the 8th or 9th year especially which holds the middle place, presenting the least number of ruptures, and constituting a limit between the hernias of infancy, which to that point decrease, and those of youth which then begin to increase. I have taken the numbers for each year of 1836 only, and find:

At 5 years,	8 boys,	0 girls,	total 8
6	6	2	8
7	10	1	11
8	1	1	2
9	7	2	9
10	9	3	12
11	7	2	9
12	5	1	6

"Taking the boys or the girls, or the two together, still the mean of the four latter years will exceed that of the four former, which seems to indicate an increase (*recrudescence*) beginning at the 9th year.

"This increase is far more striking from 13 to 20, a period of seven years, which gives for each year a mean of 13 ruptures for 1836, and 12 for 1837. It is remarkable, however, that the increase is solely among the males. Among the females, the number remains stationary, or, if reliance may be placed on such small numbers, it even seems to diminish. The period of puberty, then, in males, is accompanied by a predisposition to hernia that is foreign to the other sex. Very probably this proceeds from the difference in the occupations embraced by boys and girls; but this belongs to the question of causes. From 13 to 20 the number of individuals with rupture continues nearly the same, offering no very evident progression.

"From 20 to 28, the number evidently augments, whether the individuals are considered in mass, or distinguished according to the sex affected. The annual mean, in 1836, rises to 17, and is not much less in 1837. Among the males there

is an increase of a fourth upon the preceding period; among the females, of more than double. Here we can aattribute nothing to occupation; but marriage and pregnancy bring their powerful influence; and, we may remark in passing, it is after the age of 20 that prolapsus of the vagina and crural hernia, previously so rare, make their appearance in females."

No decided progression occurs in any of the years of this new period. But from 28 to 30 there is a remarkable increase, especially among the females. The general mean for each of the two years, is 28 in 1836, 22½ in 1837, and among the females it is double that of the preceding years.

The 10 years from 30 to 40 must be divided into two periods. During the first five years the general mean is 29 for 1836, 26 for 1837, an increase, though slight compared with the extraordinary augmentation from 35 to 40. In the latter period, the mean of each year is double that of the preceding, both for males and females. The transition is abrupt. The agreement between the two tables is remarkable, and the more so because the mean of each of these five years is not only superior to the preceding, but remains superior to the succeeding. In fact, from 40 to 50 the mean falls from 58 to 54 for 1836, from 46 to 42 for 1837; at the same time, however, a difference is perceived in the ratio of hernia affecting the two sexes. The hernia of females which, from having been one-fourth of that of males, became so rare as scarcely to reach this proportion until after the 28th year, seems towards 40 to be acted upon by new causes which carry the proportion beyond that of the first year.

"Take, for example, the two preceding periods, adding the two years together:

From 30 to 35,	54	women,	231	men.
35 to 40,	100	"	418	"

"The proportion of one-fourth is not quite reached. Compare this with the number in the two tables for the period of from 40 to 50 years.

For 1836,	131	women,	410	men.
1837,	111	"	312	"
Total, -	242	"	722	"

"The proportion of hernia among females is now one-third. Moreover, although from 40 to 50 the general mean for each year has really diminished, it has augmented for the females, and the proportion for each sex is as follows:

From 35 to 40 years, annual mean:	20 females,	84 males.
40 to 50 " " "	24 "	72 "

"Is such a difference to be regarded as the work of hazard? The coincidence of the number for the two years forbids the supposition. To what new cause, then, must be attributed this sudden advance of hernia among females?"

From 50 to 60 there is an increase, and the annual mean becomes equal or even superior to what it was from 35 to 40. The ratio between the sexes is likewise nearly as in the latter period; whence it follows that from 50 to 60 there is an increase of hernia among males, and a diminution on the contrary among females, the latter forming scarcely more than a fourth: 118 to 457, 98 to 385.

From 60 to 70 the general sum falls; and that of females remaining the same, the ratio of the two sexes becomes almost 1 to 3, as in the period from 40 to 50.

"If we take in mass the decennial period from 70 to 80, we shall find that the amount of hernia among males has decreased not quite one-half, whilst among females it has fallen off two-thirds. At this age, spontaneous cures cannot be alleged; is the mortality, which we shall show to be greater among subjects with rupture than among the ordinary population, greater still among females affected with hernia than males?

"Again, I have divided these ten years into two equal periods, in order to show the rapid decline of the population affected with rupture. Each year thins the number; previously, the new cases that occurred filled up the vacancies made by death; from 60 to 70, for instance, the amounts for each year still balanced; but mark the progressive decrease beginning with the 70th year:

At 70	years,	38	men,	10	women,	total	48
71	"	29	"	8	"	"	37
72	"	30	"	5	"	"	35
73	"	17	"	4	"	"	21
74	"	19	"	4	"	"	23
75	"	20	"	2	"	"	22
76	"	15	"	3	"	"	18
77	"	8	"	3	"	"	11
78	"	13	"	2	"	"	15
79	"	7	"	3	"	"	10
80	"	4	"	2	"	"	6
81	"	3	"	2	"	"	5
82	"	3	"	—	"	"	3
83	"	1	"	—	"	"	1

"After which I find but one subject with hernia for each of the three succeeding years; than a female aged 88, and lastly a man aged 98.

"To resume, the space comprised between birth and extreme old age, is found divided into a certain number of periods in which the frequency of hernia varies greatly, and for each of which it is necessary to compare the number of individuals affected to the total correspondent population. Evidently to take the ratio of hernia to the population at a determined age, and deduce therefrom a general conclusion, would be altogether erroneous; yet this is precisely what Knox has done. Supposing this ratio to be known, it would be necessary to establish an arithmetical proportion between the amount of hernia at this age and the total amount. If, relying on the results furnished by the years 1836 and 1837, we seek, for example, the proportion of hernia in the period from 20 to 28 to the general mass, we shall find for the male sex:

In 1836, 118 to 2,203, or 1: 18.67.
In 1837, 108 to 1,884, or 1: 17.40.

"The mean will be 1 to 18. If we wish to know then the relation of a single year of this epoch to all periods of life, we have only to take the eighth of the numbers 118 and 108 and compare it to the general numbers 2,203 and 1,884, or to perform any other equivalent arithmetical operation, and we shall arrive at this conclusion, that the sum of hernia furnished by a male population from 20 to 21, for example, is to the general sum of hernia in the entire male population as 1 is to 144."

3d. A more difficult question now presents itself, namely: *The frequency of hernia in the male population of* 20 *or* 21 *years.*

Our author chooses this period because it is the only one upon which data at all satisfactory can be obtained. To recruit the army in France, the law requires an exact census of the male population at this age to be taken annually. A general examination is made by a board of surgeons, and hernia being a cause of exemption, it would seem easy to find the relation it bears to a given number of individuals. But there are difficulties in the way. From the general mass thus registered, the law calls a certain number only, and when the council of revision have obtained the legal number of healthy young soldiers, the remainder are sent back without examination. It is here that Knox erred. He acted upon the entire registration for three successive years, 1831, '32, '33, and found the proportion to be 1. 3 for every 100; forgetting, or not knowing that the law required of each census, only 80,000 men. Instead, therefore, of taking the amount of the whole class, we must seek that of the individuals examined. This is composed of those recognised as fit for service, and of those exempted. From these latter must be subtracted still those that are exempted by virtue of the law itself, such as the elder son of widows, &c. After all this difficulties yet remain, as will presently be seen.

The documents employed by the author are all of an official character. Some of them were found in a work published by Chabrol in 1826, entitled: "*Recherches statistiques sur la ville de Paris et le département de la Seine;*" others were obtained from the Minister of War, and consist of reports made by the administration for six years from 1831 to 1837.

The *Recherches* of Chabrol set forth the results of the old conscription in the department of the Seine, from the year IX (of the Republic) to 1810, also those of the recruiting service from 1816 to 1823. In the first period, only 30,603 men were examined out of a male population (from 20 to 21) of 44,543;

In the second period, 11,730 only out of 40,576. The difference is enormous, but is to be explained by the difference in the contingent demands.

"Confining ourselves now to the subjects really passed to examination, and to the ruptures found among these, we find for the old conscription:

At Paris	25,503 exam'd,	694 hern.,	1 out of 36.74.
In the liberties (*banlieue*)	5,100 "	140 "	1 out of 36.41.

"From 1816 to 1823, separating in like manner Paris from its liberties, we find:

At Paris	9,836 exam'd,	261 hern.,	1 out of 37.69.
In the liberties	1,894 "	52 "	1 out of 35.73.

"These different proportions present a remarkable agreement, and the general mean, 1 to 36.87, seems therefore to acquire a high degree of probability."

But here new difficulties arise. It might be supposed that all those rejected for slighter causes than hernia, had been carefully examined as to the existence of the latter, that the less cause was only admitted in the absence of a greater. But the law exempts individuals who have lost an eye, who are blind, lame, maimed, &c.; and these circumstances only are noted, although other causes may exist. Now are the blind, lame, &c. unaffected with hernia? An individual rejected for defect of stature, is not examined as to the existence or non-existence of a hernia. It is indispensably necessary, then, to throw out of from the table of examinations, those sent away on account of stature, or for graver causes. This destroys the previous calculation; the ratio of 1:37 becomes too small, nor is it possible precisely to determine it. Thus, subtracting those only rejected on account of small stature, and the proportions before given become,

For the old conscription	about 1: 31.27.
For the new	about 1: 32.63.

By pursuing this process in reference to more important infirmities than hernia, the ratio augments frightfully. But it is exceedingly difficult to determine, in many cases, from the tables, whether such an affection as scall, for example, served for the discharge of an individual laboring under a slight her-

nia, or whether a voluminous hernia attracted attention rather than a slight degree of scall. As hernia, moreover, is less common (according to Malgaigne) among men of small stature, the proportions, bearing solely on those of the required height, would of course be exaggerated.

"All these things being duly considered, it appeared to me that by compensating for this rarity of hernia, among subjects rejected for defect of height, with the surplus of hernia not mentioned, though probably existing among subjects rejected for graver causes, I might keep within the true limits, equally removed from exaggeration in *plus* or in *minus*; and consequently, from the numbers thus far mentioned, the proportion would be 1: 31.64, and more fully 1: 32."

The documents obtained from the War Department bear upon an imposing mass of individuals, and as they extend over a space of six years, the results will go far to destroy or confirm the inference just deduced from previous documents. Before presenting the table some explanation is necessary:

"The second column indicates the force of the class, the third the number called before the councils of revision. In reality, from this third column should be deducted the fourth, which comprises the individuals called in the order of their numbers, and who, not having answered, are set down as valid and declared soldiers. It must not be imagined that these refractory individuals are all fit for service, and neglect a proceeding which they know very well at the time would be useless. The Minister of War marks, on the contrary, their absence as punishable, because it causes to be directed upon regiments recruits for the most part infirm. The fifth column comprises two categories, first the legal exemptions which have to be submitted to the board and by them verified, but which render a coporeal examination useless; second, what is called the *deficit*, that is to say, individuals dying, or convicted of infamous crimes, after the period of enrollment, and who consequently have not been submitted to examination. This fifth column, therefore, must be deducted from the list of individuals called; the remainder comprises the valid subjects, the infirm, and those rejected for defect of height. I have not noted the valid subjects, the number of which, always fixed by law, is 80,000. I have also left out those rejected for want of height, as this element no longer interests us, and besides may be obtained from our tables by a simple arithmetical operation.

Finally the last two columns constitute the summary of each series, namely: the last but one, the exact number of individuals examined in relation to infirmities, valid or non-valid; and the last, the number of ruptures detected by the board of examination.

I thought it right to give all these numbers, more especially in order to place the finger, so to speak, upon the error committed by Knox, in not having decomposed, as I have, the quantities which express the total force of the class.

Years.	Force of the class	Number called	Absent.	Legal exemptions & deficit.	Rejected for infirmities.	Total number examined.	Ruptures.
1831	295.978	171.541	2.246	28.039	47.531	125.285	4.044
1832	277.477	166.305	2 136	27.263	43.908	121.772	3.579
1833	285.805	172 397	3.572	29.128	48.175	124.603	4.222
1834	326.298	171.772	2.545	28.990	48.316	125.771	3.994
1835	309.376	173.765	2.357	30.316	49.009	126.652	3.921
1836	309.516	179.317	2.398	31.147	53.190	130.792	4.461

"Seek now the exact proportion of subjects with hernia in those examined, and you have the following results:

In 1831	1: 30.98
1832	1: 34.05
1833	1: 29.95
1834	1: 31.49
1835	1: 32.30
1836	1: 29.34

"And by adding the several sums together, you will obtain 24,221 persons with rupture in a total mass of 754,875 passed to examination; the proportion is a little more than 1:31, rigorously 1: 31.16. This is a remarkable conformity with the proportion deduced from the documents furnished by the department of the Seine; and it appears to me sufficiently demonstrated that the general proportion is from 1:31 to 1:32. I myself hold to the latter for reasons already explained, and if any one finds it too small, it will be easy for him to rectify at his pleasure the calculations I am now about to enter upon."

4. The next inquiry is, *The general ratio of ruptures to the sum total of the population.* As this section is short we present it without abridgement.

"The frequency of ruptures at the age of 20 being known, it is easy to arrive at their proportion for all ages. Thus I take table m of the *Annuaire des Longitudes*, exhibiting the

law of population in France for ten millions of inhabitants, the population from 20 to 21 years comprises 173,576 individuals, or for the males 86,788. Of these the proportion with ruptures at 1:32 will be 2,712

"On the other hand, if we seek in each of our two tables what is the exact number at the age of 20—21 for males, we find it by taking the eighth of the amount assigned to the period of eight years from 20 to 28. This eighth, for the first table, 1836, is equal to 14.75 ruptures; for the second, 1837, to 13,50 ruptures.

"Comparing these quantities to the sum total of each year, it is found that the ruptures observed in subjects from 20 to 21 form, for 1836, 1-149th of the whole number, and for 1837, 1-139th—the mean, 1-144th.

"If now we multiply by 144 the sum of 2,712 hernias accruing from the males of from 20 to 21 years, in a general population of ten millions of souls, we shall have the approximative sum total of ruptures affecting the male portion of this population, that is to say, five millions of men will offer very probably a mass of 390,528 affected with hernia, a little more than one-thirteenth.

"The five millions of females, having one-fourth only of the number of ruptures which afflict the other sex, will count only 97,382 subjects of rupture, or about 1: 51.

"And lastly the total number of ruptures amounting to 488,360, will be found to the general population in the ratio of 1 to 20.5; that is to say, between 1: 20 and 1: 21."

This enormous difference of the ratio of hernia to the population at 20 years and to the general population, leads our author to consider this question:

5. *The ratio of hernia to the population at different ages.* This is studied in reference to the male population only; the smaller proportion of ruptures in the other sex, giving to the calculation for females less interest. To find the proportion of hernia during the first year of existence:

Five millions of males give, at this age, 153,627 souls. The tables for 1836 and 1837, united, give, as we have already seen, 1: 52.39 for the ratio of hernia at this age to the whole number. Dividing now, by this quantity, the whole number of ruptures (390,528) furnished by the entire male population, and we have the number of ruptures furnished by 153.627

individuals one year old, viz: 7.453. The proportion is 1: 20.67.

In repeating this operation, owing to the manner in which our author has divided the duration of life into periods, a slight inaccuracy occurs, which he thinks it sufficient to point out. "For example, by attributing in mass a certain number of ruptures to the period from 40 to 50, and by supposing them equally distributed upon each of the ten years composing this period, it is evident that they must be reputed less frequent from 40 to 41, than from 49 to 50, inasmuch as the population is less for the latter than for the former year." Bearing this in mind and repeating the operation for all the periods admitted, we have the following results:

"From birth to 1 year the proportion of ruptures to male subjects is - - - - - -	1: 20.67
From 1 to 2 years - - -	1: 29.09
2 to 3 " - - -	1: 36.87
3 to 4 " - - -	1: 55.64
4 to 5 " - - -	1: 59.72
5 to 13 " - - -	1: 77.31
13 to 20 " - - -	1: 41.72
20 to 28 " - - -	1: 30.74
28 to 30 " - - -	1: 20.23
30 to 35 " - - -	1: 16.58
35 to 40 " - - -	1: 8.41
40 to 50 " - - -	1: 8.37
50 to 60 " - - -	1: 5.54
60 to 70 " - - -	1: 4.37
70 to 75 " - - -	1: 3.27
75 to 80 " - - -	1: 3.74

"There is, if I am not deceived, a powerful interest in thus following from age to age, the ascending or descending progression of hernia, compared to the population. Although pretty frequent in the first year, we see how far it is from justifying the conjecture of Camper, who, in 70 dead male infants, having 7 times found one or indeed both of the testicles still in the abdomen, and 56 times the inguinal canal open, upon one or both sides, concluded that hardly one-ninth of new-born male infants escaped hernia. This is substituting induction for fact, a logical fault, of which works of the XVIII. century show too many examples.

"After the first year, the proportion declines rapidly, so that, allowing for all cures which may take place, the conclusion is inevitable, that the mortality is nearly four times greater from birth to the 13th year, in subjects with hernia than in others. To avoid this conclusion, shall we admit that two-thirds of the ruptures are cured at an early age? The proportion, from what I have seen, appears to me greatly exaggerated; and yet it would not be sufficient, for a certain number of ruptures are developed at the ages of 2, 3, 4 and beyond, which would supply the losses caused by death in hernious subjects of the first year, and which compel us to admit that the mortality is much greater than it appears, or the cures far more numerous.

"After 13 and up to 75, the production of hernia is so active, so out of all proportion with the losses this peculiar population can sustain, that we can draw nothing from the preceding table touching the question of the greatest mortality. But passed 75, our figures will determine the question; supposing no new hernias supervene, the proportion of the preceding period would continue the same; so far from this, the number of ruptures, although constantly reinforced, diminishes more rapidly than the ordinary population. Here no radical cure can be alleged; death alone can commit such havoc. Nor will strangulations account for this increased mortality; these, very rare at any age, are still more so among the old, and offer besides less danger than in adults. Before all things else, I refer it to the inconveniences resulting from the hernia itself, which in the end alters the digestive powers, and thus precipitates the loss of the vital forces."

After the 80th year, the annual decrease of hernia is thus presented by Malgaigne:

From 80 to 83 the proportion to the rest of the population is - - - - - - -	1: 14.41
From 83 to 86 - - -	1: 24.93
From 86 to 98 - - -	1: 35.36

But there are two sources of error in the calculations thus presented. From the tables of Villermé, it appears that the general mortality is greater among the poor, than in the other classes. Thus, of ten thousand individuals there remained

	Rich Departments.	Poor Departments.
At 60 years - -	3,127 - -	2,196
80 - -	697 - -	380
90 - -	82 - -	53
100 - -	1 - -	1

Hence it is to these quantities rather than those derived from the law of population that the number of ruptures must be compared.

But besides the mortality which weighs upon the indigent population of Paris, there is another source of diminution, entrance into the public hospitals; after the age of 79, all the destitute have a right to enter into the two hospitals devoted to old age, Bicêtre for males, Saltpétriére for females. It was necessary then to have the exact number really existing at the time of our author's researches. This is furnished by the numerical census of the class, published triennially by the hospital administration. Unfortunately, however, in giving the ages, they have confounded the sexes, and confined themselves to heads of families. Still, taking the number of these, for the years 1836 –'37, as approaching at least pretty near that of all the poor in the latter periods of life, and comparing it with the number of ruptures at corresponding ages, observed at the central bureau (see table at p. 320), we have:

For 10,493 paupers,	from	60 to	75,	1,224 hernia,	1: 8.57
2,070 "	"	75 to	80,	155 "	1: 13.35
1,041 "	"	80 to	90,	41 "	1: 25.39
35 "	"	90 to	100,	1 "	1: 35.

These must not be thought the only ruptures furnished by this indigent population. But, continues the author:

"What I desire to establish, and what flows unanimously and invincibly from all these calculations, is, that after the age of 75, the population affected with hernia disappears more rapidly than the ordinary population, four times more quickly, for example, for the period from 80 to 90 years, even taking no account of the new ruptures that occur and partly fill the vacancies made by death in subjects of the preceding period."

6. *The proportion of hernia in the indigent and easy classes.*

Few large cities present, in so decided a manner as Paris, a population divided into a laboring and necessitous portion, and a rich and fashionable portion, each inhabiting its own quarter, and between the two extremes a third, the wealthy and commercial quarter, where wealth and luxury dwell side by side with the most squalid poverty and wretchedness. By comparing the three quarters together, for a series of years, it would seem possible therefore to ascertain what influence, if any, these circumstances have upon the production of hernia.

The first attempt of the kind was made by Richerand, who noticed that among the conscripts for the years XI. and XII., two districts of the city, St. Antoine and St. Marcel, offered more hernia than the others. He explained this result "by the kind of labor to which the inhabitants were devoted," that is to say, "the exercise of mechanical occupations."

In the work of Chabrol, *Recherches statistiques, &c.*, already referred to, our author finds valuable details touching this point; three tables, in which are enumerated the paupers relieved in the twelve districts (*arrondissements*) of Paris, during the years 1821, 1822, and 1823. These show that the greatest number of poor belongs to the sixth, eighth, ninth, tenth and twelfth districts; the least to the first, third and fourth; whilst the middle place is held by the second, fifth, seventh and eleventh.

Comparing now the sum of hernia produced by these districts for the male population of 20 and 21, and for the seven years from 1816 to 1823 (we omit the calculations for each district) we have the following aggregate result:

	"POOR DISTRICTS.		
"Total examined	4,030,	142 hernias,	1: 28.38
	"RICH DISTRICTS.		
"Total examined	1,604,	43 hernias,	1: 37.30
	"EASY DISTRICTS.		
"Total examined	2,913,	76 hernias,	1: 38.32"

The results for the *rich* and *easy* districts are nearly the same, the mean proportion being 1:38. On the other hand, the *pauper* districts exhibit a proportion much greater than the general mean, which, calculated for Paris only, in the years indicated, is 1: 32.86. This shows, also, that hernia is not so frequent in the capital as in the liberties.

"We may say then, in general, that the richer classes are a little less subject to hernia than the pauper class, save the general influences, such as climate, race, and mode of life."

7. The last and not the least interesting point of this inquiry, is, *The relative frequency of hernia in the different parts of France.*

"We have seen that the general proportion, disclosed by the tables of recruits, is the same for Paris and for all France; and this conformity will appear less surprising to those who consider that Paris has not, so to speak, a proper population; that the individuals born in its circumference belong, for the most part, to families from the various provinces; insomuch that we may say of it what the Romans said of Rome, it is an epitome of the whole empire. But out of Paris, these different provinces of which France is composed, do they present the same results? Are ruptures as frequent in the north as in the south, in the mountains and valleys, among the people of Roman and Gallic origin, and among those mingled with foreign blood?"

The War office again, in its returns of recruits for each department of the kingdom, furnishes the materials to elucidate these questions. Until the year 1836, however, none of these reports were published in sufficient detail. Aware of the insufficiency of the data, it was not until after analysing the tables of that year for each department, as he had formerly analyzed those for the whole kingdom, and finding striking and remarkable differences, that he began to feel confidence in the results. Subsequently the tables for 1837, subjected to the same process, and carefully compared with the former, with some partial exceptions verified all these results.

From the mean of these two years he proceeds to develope certain considerations, some of which we shall notice. A map is also given—a map of "*hernious France*"—showing at a glance where the disease is most common. This map is a curious thing in its way, and we are sorry we cannot reproduce it; however, what follows will be sufficiently intelligible with any good map.

We may state here that the general proportion for the departments as deduced from these last researches, is as follows:

For 1836, - - - - - -	1: 29.34
For 1837, - - - - - -	1: 33.42

Giving a mean term of 1: 31.38. The mean term heretofore deduced, the reader will bear in mind, is 1: 32.

As might be expected, the greatest variety is observed in the amount of hernia presented by the departments. Whilst some fall as low as 1 in 145, others rise as high as 1 in 13. The contrast is marked, the transition sudden, conterminous departments presenting the wide disproportion of 1: 16 and 1: 45, 1: 58 and 1: 116, &c. Hence those where ruptures abound do not rank in well-defined zones, but are found at all points of the compass. Nevertheless it is remarked that they form a large uninterrupted series, cutting France from north to south and from east to west, or from the department of the North to that of the Lower Pyrenees. Taking the 46th degree of latitude as the line of division between northern and southern France, the latter presents ten departments with hernia out of 36, whilst the former counts 22 out of 49. In northern France is a compact mass of 13 departments grouped together, with extensions towards the south and east. In the southern division is found a pretty compact group of five, continued towards the Lower Pyrenees; another small group of three on the side of the Eastern Pyrenees; and in the extreme south-east, the department of Var. It is noted as something curious that hernia is common in the five principal

angles of France, viz.: the departments of the North, the Upper Rhine, Lower and Eastern Pyrenees, and of Var.

The opinion that the dwellers among mountains are more subject to hernia than the inhabitants of plains or valleys, is almost universal. The contrary would at first view seem to be established by these researches. The valley of the Seine, that of the Loire, and the Garonne, all present departments abounding in hernia. But so many exceptions occur to this, so many instances of departments distant from mountains falling below the general mean, that without denying the influence of a habitation in mountainous or level districts, Malgaigne thinks other causes must be recognized, whose influence is perhaps greater.

He had shown by previous researches that hernia was more frequent in individuals of high stature than those of medium height. This, too, seems at first to be confirmed by the different proportion of ruptures in northern and southern France. Statistical writers have indeed called the former, France of great stature—*la France des grandes tailles*—and it is evident that ruptures are more common there. Yet particular facts are altogether opposed to this; in the departments of Doubs, Jura, Somme, and Moselle, which send recruits of the finest stature, hernia is rare; whilst Allier, Charente, and Vendeé, where the average stature is low, present hernia in greater proportion than most other departments.

"Thus high stature, like the habitation of plains, establishes a general predisposition to hernia, but within certain limits, and frequently opposed by other conditions which must be sought elsewhere."

To the north-west lie a mass of departments grouped along the littoral confines of the empire, where hernia is infrequent. These are the five departments of ancient Britany, where the proportion varies from 1:58 to 1:116; the two departments of Maine, proportion 1:49 to 1:58; three of Normandy, which give 1:36 to 1:81; and far to the north two others, 1:65 to 1:145. Here occurs one of those sudden transitions

to which reference has been made. The three departments of Poitou, conterminous with Brittany, exhibit a proportion of 1:16 to 1:27; below Poitou are three others, which go as high as 1:15 and 1:14. Eastwardly the increase is more gradual; but far to the north is Pas-de-Calais, 1:145, in contrast with the department of the North, 1:16. These strong contrasts, occurring in both years, are to be ascribed to something besides chance.

"It is interesting to observe here that ruptures suddenly become very rare in all the zone where the culture of the vine ceases, and where cider is the general drink. In the department of the North, the population is rich, the cities large, and the vine does not grow; all conditions which seem to favor a less production of hernia. The result is quite the reverse; must it be charged to the general use of beer? I ask a question, rather than give a solution."*

In the southeast, lie 26 departments, which exhibit a variable proportion, though always below the mean; they include the greater part of Languedoc, Auvergne, and Provence, with the whole of March, Limousin, Lyons, and Dauphiny; their continuity is interrupted by four others, whose proportion is above the mean. The most general character of all these departments, is that they are mountainous. A large part of their population make habitual use of oil, a circumstance which enables us to test the opinion advanced by some writers, that oleaginous aliment† favors the production of hernia. The northern limit of the olive, as assigned by Malte-Brun, includes nearly one-half of these departments. With three exceptions, the olive region is below the mean propor-

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* Apropos to this; Lawrence quotes a passage from Soemmering, who thought potatoes favored the formation of hernia, and another from Blumenbach, who assigns milk as a cause of the great prevalence of ruptures among the Swiss and Dutch. He then remarks with a touch of humor: "It seems strange that a single Irishman should escape the united operation of the milk and potatoes." If to these be added the beer, the Dutch and English would fare quite as badly.

† Train-oil, for example. Hence your Esquimaux would be one immense hernia—unless saved by Liebig's theory.

tion; and the contiguous departments, where the consumption of oil is equal, are among those which, of the whole kingdom, present the smallest number of ruptures.

Lastly, to the northeast, are Burgundy, Franche-Comté, Lorraine, a part of Alsace and Champagne, comprising 13 departments, where the proportion varies from 1:33 to 1:82. Two, and perhaps three exceptions occur, in departments which equal or exceed the general mean.

"To what shall this exemption, for the northeastern part of France, be attributed? Nearly all the departments are occupied by mountains; however, Moselle and Meurthe are quite level; and the former especially offers less hernia than Manche and the Vosges. No doubt it would be rash, with the results of only two years, to launch into conjectures that might be falsified by succeeding years; and all this can pass but for a first glance cast upon an unknown domain, to reveal its existence and call thither new investigators. But I cannot conceal the impression made upon me by these first researches, as the most general consequence; which is, that, if the habitation of mountains and large cities, and the use of certain aliments, seem to defend the population against a too frequent occurrence of hernia, it is to the difference of races that must be ascribed the difference of the proportions pointed out. The vast territory of actual France has experienced, perhaps more than any other portion of Europe, the influence of numerous imigrations. The race, probably the most ancient of the soil, shut up in the Armorican peninsula, and recognizable still by its aspect and its language, is that of the Cymri, the population of ancient Brittany, less subject than any other to the development of hernia. There especially where it is preserved the most pure, the proportion of these infirmities is exceeding small; it increases perceptibly in the sole department where industry and commerce have called foreigners. Maine and Anjou, nearer the centre of the empire of civilization, with a more mixed race, already contrast with Brittany by the number of their ruptures. Something similar is seen in Normandy, where the old population has been replaced, or intermixed with the Danes; there also the department of the Lower Seine, opened by commerce to men of all races, seems to have lost its primitive national vigor. Lastly, it is difficult not to be struck with the contrast between the people of Picardy and Artois on the one hand, and

those of the department of the North, on the other, where the Belgic or Flemish race predominates.

"Look now through the northeast; Lorraine, Burgundy, Franche-Comté, will show you the Gallic blood mingled with the Germanic; in the southeast, Lyons and the Dauphin have similar origins; Provence unites in its modern population the descendants of the Ligurians, Greeks, Romans, and Visigoths; and lastly Aquitaine belongs to the Iberian race. There remain at the centre, the families of the Gallic or Gallo-Roman race, better preserved from invasions than the others by their position. This is ancient France, and almost to this day the France of Charles VII., constituted chiefly of Champagne, Isle-of-France, Orleans, Touraine, Poitou, &c., where ruptures are seen to predominate. To the influence of the race, add now, if you will, the influence of the soil inhabited for ages, plains or mountains, then perhaps the influence, less energetic doubtless but always perceptible, of certain aliments; and you have, if I do not deceive myself, the elements necessary to elucidate this capital fact; the differences of the predisposition to hernia in the various provinces of France. Be the explanation what it may, the fact itself is unquestionable; and this difference exceeding the proportion of 4 to 1 in conterminous provinces, as in Brittany and Poitou, is it astonishing that the statistics of hernia in England, Holland, and Belgium, even when most worthy of confidence, give results different from ours?"

Malgaigne, in conclusion, thus meets an objection which these last researches may suggest against the first:

"For, if the rich are less subject to hernia than the poor, the citizen less than the peasant, the mountaineer less than the dweller in the plain, and certain races less than others, is not all that I have elaborated upon the relations of hernia to population, sex and age, again called in question?

"But it must be considered that for the proportion from the age of 20 to 21 years, I have made my calculations for the whole of France;

That these calculations were found just for Paris in particular, which is an epitome of France;

And that for the other proportions relative to the sexes and the different ages, the population of Paris, which furnished me with the elements, is in reality the one which best represents that of France." C.

ART. IV.—*The Principles and Practice of Medicine.* By JOHN ELLIOTSON, M.D., Cantab.; F.R.S., President of the Royal Medical and Chirurgical Society; President of the Phrenological Society; late Professor of the Principles and Practice of Medicine, and of Clinical Medicine, and Dean of the Faculty of Medicine, in University-College, London; late Senior Physician to the University-College-Hospital; Fellow of the Royal College of Physicians; formerly Physician to St. Thomas's Hospital, and President of the Royal Medical Society of Edinburgh. Edited by NATHANIEL ROGERS, M.D., Member, and late President, of the Hunterian Society of Edinburgh; and Corresponding Member of the Medico-Chirurgical Society of Dublin; and ALEXANDER COOPER LEE. *First American, from the Second London Edition, greatly enlarged and improved. With notes and additions;* by THOMAS STEWARDSON, M.D., Physician to the Pennsylvania Hospital. 8vo. 1 vol. pp. 1045. Carey & Hart. Philadelphia. 1844.

It is fortunate for the modern critic, that he is not compelled by the usages of his profession to graduate his reviews by the size, the length, the breadth, or the *weight* of the works which he is obliged from time to time to notice. Were the reverse the case, a long period would necessarily elapse before we should be permitted to drop the curtain between our readers and the volume which stands at the head of this article. Of the very numerous treatises on the Principles and Practice of Medicine with which the press has teemed during the last quarter of a century, that of Dr. Elliotson is not only one of the most ponderous, but, in many respects, one of the most singular that has fallen under our observation. Published in octavo form, bound in substantial sheep, and comprising upwards of one thousand closely printed pages, its weight, we are assured, is fully equal to that of the fœtus at the end of the seventh month. We do not mean by this to intimate that its birth was premature, or that it would have grown to a still more gigantic size, if time had been allowed the learned author to bring it out himself. Its title-page exhibits, it will be observed, in large and small type, not less

than twenty-eight lines, interspersed with the names of four individuals, one of whom stands in the light of principal, the others in that of "aiders and abettors" of this extraordinary offspring of the medical press. The principal, to whom we owe the bone and sinew of the work, had no agency, it would seem, in sending it forth. The lectures which he delivered were copied, published in medical journals, and, attracting an uncommon share of attention, have been arranged and sent abroad by the three editors in their present form.

The volume, which is unquestionably one of great learning, is dedicated with perfect propriety to Lord Brougham, the noble patron of letters in Great Britain, and the only omission which one regrets to find, in contemplating its portly figure and *Falstaffish* physiognomy, is that it is not embellished by the likeness of the author, his commentators, and, especially, his American *appendiculus*. How so glaring a blunder could have been committed, considering the tact and taste of the editor at Philadelphia, is not easily understood. The omission certainly constitutes a defect which must strike every reader, and we therefore cannot forbear the expression of a hope, that it will be supplied in a second edition, an early call for which is rendered certain by the very valuable "notes and additions" of Dr. Stewardson. In that event we would respectfully suggest, that Dr. Stewardson, instead of placing himself, as he has done in the present instance, with characteristic modesty, at the foot of the page, "*locate*" himself in the *centre* of the frontispiece, with Dr. Elliotson above, Dr. Rogers on the right, and Mr. Lee to the left, with a wreath encircling the group, and resting upon the brow of the American editor. The latter gentleman is quite too modest. We insist upon his taking a more conspicuous position. His contributions to the volume before us entitle him to it. But if they do not, the fact of his having so generously taken it upon him to patronize the efforts of Dr. Elliotson, most unquestionably does. Dr. Elliotson, president of the phrenological Society of London, and late Professor of the Principles and Practice of Medicine in University-College, &c., is little

known in this country, and the kindness of Dr. Stewardson in stepping forward to endorse his labors, cannot be too highly appreciated. The American profession, on this account, owes Dr. Stewardson a heavy debt of gratitude. But for this opportune service, Dr. Elliotson's Practice might have fallen still-born from the press, and thus would have been lost to our countrymen all the learning and experience which this great work embodies.

Seriously; we are no admirers of the *grafting* system so long and so much in vogue in this country. It is quite too much the fashion with us, to seize upon foreign books the moment they touch our shores, add a few meagre, if not worthless notes to them, stick a name into the title-page, and then strut abroad in large gilt letters upon the cover, with all the complacency of the jackdaw in his stolen feathers. Often, as in the present instance we suspect it will be decided, the size of the book is swelled, without any addition to its real value. Matter is infused into it which operates much like the water added by dishonest dealers to spirits. There is extension, but no increase of weight. The volume grows, but its additions are such as to cause its readers, in the bitterness of disappointment, to cry out "a *great book* is indeed a great evil." It is in such cases that we feel the force of the saying of the old poet, that "*the half is greater than the whole.*"

The volume to which Dr. Elliotson's name has been appended is a work, which could not have emanated from any but a great, original, and highly cultivated mind. It is replete with learning, and with the rich experience of a man who has seen much of disease, and is accustomed to think for himself. Every page bears the impress of a clear and untrammelled intellect, not free from prejudices, we dare say, and prone, perhaps, to be dazzled and carried away by novelties of a certain character. But it is a mind of so much vigor, so capable of enlarged views, and so frank and fearless in the adoption and advocacy of what is felt to be the truth, that one readily overlooks the few aberrations into which it may have been betrayed. In looking through the practical and judi-

cious pages of this elaborate volume, one is disposed to forget that its gifted author gave himself up to the delusions of animal magnetism; and if any one should take the volume up with prejudices against it on that account, which we confess was our own case, they must be very perverse prejudices if they do not soon yield to the strong good sense in which it abounds.

Of course, we have no thought of attempting an extended analytical notice of this work, but will make a few extracts which will serve as specimens of Dr. Elliotson's very agreeable manner, and the first shall be from his introduction. He is speaking of medical education, and in referring to the two classes of medical men in England—the *physician*, and the *general practitioner*—and to the objection urged by some to an improvement in education, that it would make the latter equal in knowledge to the former, he introduces the following very agreeable history of his rise in his profession:

"In *me* such narrow views would be the height of baseness, and would be the height of ingratitude; for I hesitate not to avow,—I rejoice in this public opportunity of declaring, that to the general practitioners of England, Scotland, and Ireland, I am indebted for success in my profession. When I commenced my professional career, I determined upon seeking for success by working hard; and by conducting myself as well as the infirmity of human nature would allow. I determined, however long I might wait for success, never to fawn upon and run after my superiors, nor to stoop meanly to my inferiors; never to intrigue for an advantage, nor to employ trumpery artifices for making myself known to the public. For many years I toiled; and saw most of my contemporaries, —nay, of my juniors (who worked less, but were wiser in their generation) pass by me. I published work after work, —edition after edition; and paper after paper was honored with a place in the Transactions of the first Medical Society in Europe. I was physician to a large metropolitan hospital; and had attended there, and gratuitously out of doors, above 20,000 patients. But in vain. In the year 1823 my profession was no more lucrative to me than in 1818, and was as short of my actual expenses. At that time the "Lancet" was pleased, now and then, to publish a clinical lecture, delivered by me at St. Thomas's; and my practice at once doubled.

The following year it published the greater part as I delivered them; and my practice doubled again. Next season, the "Lancet" published them all; the "Medical Gazette" followed its example; and my practice doubled a third time. This astonished me the more, as my clinical lectures were generally delivered with little or no premeditation; while all that I published myself had cost me great labor, many a headache, and much "midnight-oil." It was through the general practitioners, in the large majority of instances, and through general practitioners (for the most part) with whom I had not the honor of any acquaintance, that the publication of those lectures accomplished my success. To the body of general practitioners, therefore, I owe a debt of gratitude. They have called me forth spontaneously, from no interested motive; and I cannot exert myself too much in the education of their successors.

The following remarks are just, and are entitled to the careful consideration of the young practitioner:

It is in making an accurate, careful diagnosis, that the medical practitioner chiefly shines. When the nature of a disease is once ascertained, it is no difficult matter to treat it. Other qualities of mind are then required;—frequently only courage, or mere perseverance; but it is in making a diagnosis,—in ascertaining the character of a disease, that the scientific practitioner outshines the inferior. Unfortunately this is a point not attended to as it ought to be. Many persons pride themselves in being good practitioners; because, without knowing what is the matter, they can say what will do good. It is an unscientific way of proceeding; and even if I could not practise better for making a good diagnosis, still I would be as particular on that point as possible, for the sake of observing a good general rule,—for the sake of endeavoring to treat the patient better than I otherwise could, notwithstanding all my conceit; and for the purpose of being ready to meet any unexpected emergency that might arise. A medical man who will not take the trouble to establish a diagnosis, is just like a surgeon who will not condescend to learn the anatomy of hernia; but who says that he knows if he cuts this way and that way, he shall liberate the entangled parts, and accomplish the operation as well as the best. I have witnessed this; but, then, what are such men when a difficulty arises? They are lost in perplexity, and glad to apply to those who know better. It is impossible to be too minute in making a diagnosis.

Of the pulse he remarks:

"We must also remember, as physiologists, that the pulse differs in every age,—that the younger we are, the more quick is the pulse; also that the pulse of the female is quicker than that of the male; and that, generally, the inhabitants of a warm climate have a weaker pulse, than those in a more temperate latitude. It is necessary to take all these things into consideration; because, if we were to find the pulse of a child 120, and that of an adult laboring under fever likewise 120, we should commit a great error in supposing that the child likewise labored under fever. It is necessary, therefore, to remember that the pulse varies according to age, sex, and climate; and that in young children it is particularly quick. I had an instance of the great use of examining a patient in bed, and not being contented without what is contemptuously called "a *mechanical* examination," in an enlargement of the abdomen:—

Case.—I was called to visit a pregnant lady, about thirty years of age, whose pulse was about 80 or 90; but on listening to the abdomen,—she being single, and having some disease (as she said.)—there was another pulsation, about 128. The pulsation did not arise from any of the branches of the iliac arteries; for their pulsations would have been the same as at the wrists. She had a pulse of 80; something within her had a pulse of 128; and what that was, I left her to settle by herself. All that I could say was, that if she waited patiently, the whole of the disease would come away, to a certainty, in two or three months."

The author cites many curious cases under the head of "*derangement of the digestive organs,*" as follows:

"Sometimes the appetite is not simply *deficient*, but is *depraved.* This is particularly seen in females; and is called "pica" (*a magpie;*—an animal said to be subject to this complaint.) Sometimes young ladies long for chalk, cinders, or sand; and they will bite glass,—munch it; and, when it is small enough, they will swallow some of it. I saw a lady, who ate *brown* paper; she longed for something to eat,—for something that she had never eaten before; but she could not tell what;—nor could I. I have heard of cases where the patient longed for raw flesh, and even for *live* flesh; so that some have eaten live kittens and rats. This is an absolute fact. In the same way, some have been known to long for the contents of snuffers; and even for manure. A case is de-

scribed of a man who ate a live pig,—leaving the intestines; but, after a little while, he ate them also. There is a case described, at full length, in a German work, of a boy who had such a longing for lime, that he ate all the mortar he could pick out of the wall; and, being well horsewhipped for it, he then commenced on a *neighbor's* wall. In order to prevent this, however, the neighbor smeared the wall with a decoction of wormwood, and the boy could no longer relish it; but he then went to the kennel in the street, and sucked up the sand. He had a desire for something dirty. After this he got to some quick lime; and was forced to drink a large quantity of water, to extinguish his thirst. The mucous membrane within, had a distaste for what is called "*good* food;" but, in other respects, he was quite well. I recollect having read of a girl, and also of a student at Leyden, who always ate spiders when they could get them; and no harm arose from it. I have read of a man who disliked bread, and never ate it; but he was seized with a quartan ague, and then ate a large quantity. He recovered from the ague; and the disgust towards bread returned. This disease occurs in young women (even moral ones) who do not menstruate well;—as I mentioned when speaking of chlorosis; and many pregnant women have some strange longing of this description. Every one must have met with instances of women longing for what it was difficult to get;—longing for things out of season. There was one who longed for a bit of the priest's sleeve, and contrived to get at it and bite it;—not caring for his excommunication. I could relate cases, almost without end, of this description. One dipped her bread in a tar-tub. I never met with these extreme cases; but every one must have read of instances of this nature."

We saw a striking instance of the sort last summer. The subject was a young married woman. She had an ungovernable propensity to eat newspapers: the smell of a printing office nearly distracted her. She ate newspapers every day in large quantities. Her digestion became greatly deranged; bowels torpid; complexion exsanguineous. The depraved appetite was corrected by the use of iron—the prussiate or carbonate—and she is now in pretty good health. Whenever she feels any return of the odd propensity, she resorts to the iron, which she has found to be an effectual remedy against it.

Concerning sluggishness of the bowels, our author has the following observations:

"Very frequently, the stomach is not in fualt; but there is a sluggishness of the intestines; and, as the cause is situated there, a regular course of purgative medicine will be found absolutely necessary. It is wrong to give *strong* purgatives. Those which open the bowels regularly, are best adapted for the purpose. It is astonishing how long things taken into the stomach and intestines, will remain quiet; and then give rise to various symptoms. I alluded to the circumstance before. In the "Philadelphia Journal," for 1822, there is an account of a coagulum of milk, which was vomited two months after it had been taken. I have myself seen a coagulum of milk, like bird-lime; which had remained some days (even a week) in the patient's stomach, and produced the greatest uneasiness; —the stomach not being in fault, but being oppressed by this particular substance. I have seen a piece of salmon vomited by an infant, a month after the nurse had been so foolish as to give the child that food. I mentioned, that Dr. Barlow (of Bath) published a case, in which pills of sulphate of iron were discharged, *per anum*, nine months after they had been taken. In a foreign journal, a case is mentioned, similar to that of Dr. Barlow's;—a case in which pills were vomited, a year after they were taken. An instance is recorded, in which a blacksmith's son bolted thirty grapes. He did not *masticate*, but swallowed them *whole;* and, after three months frequent vomiting and extreme suffering, he was cured by an active purgative medicine. Ten of the grapes came away whole, even then. A case is mentioned by Bartholini, where a coagulum of milk, as large as a man's tongue, was discharged, after the patient had taken muriatic acid. The same author also mentions a case, where a patient had swallowed a swine's tooth. He suffered under hypochondriasis and extreme emaciation, for two years; the tooth was then discharged *per anum;* and the individual perfectly recovered. Occasionally, then, we may have disorder of the digestive organs from articles which have been taken, and have remained in the stomach and intestines a much longer time than we could imagine. If, in a case of disorder of the digestive organs, we suspect any thing of this kind, we ought to employ strong remedies. Purgatives and injections, of course, are very important.

"But whether this be the cause of the disease or not, it is of the highest importance to keep the bowels regular. Nothing

can be worse than to give strong purgutives for this purpose; except where there is something considerable to be brought away. In a case of habitual costiveness, strong purgatives are decidedly bad; because, when we have once acted violently on the intestines, the latter, according to the laws of nature, must fall into a torpid state,—go to sleep. During this condition of repose, the fæces accumulate again; so that we have to give another strong dose, in order to remedy the mischief of the first. Thus the person is always costive, or taking strong medicines; the consequence of which is, that he is at last obliged to take them, or he will fall into a state of dyspepsia."

Our readers would hardly pardon us if we closed this article without some further account of the American editor, in whose history they must, by this time, feel an extraordinary interest. Be it known to them, then, that he was educated in Paris, under the fostering care of Louis and Chomel, whom he appears to regard himself as having already distanced in his scientific achievements. He is the translator of a memoir on Emphysema of the lungs, by one of his illustrious Parisian masters, M. Louis, physician to La Pitié. In this paper he takes occasion to say, that having had an opportunity, during his daily visits to that establishment, of observing for *himself* a portion of the patients referred to by the author, he is able to *vouch for the care and attention bestowed upon their examination.* Notwithstanding all this care, such was his astonishing acuteness that he was able to discover and correct several errors contained in the original—a circumstance which, if we consider the infallibility of the French observers, must be allowed to place him in the very front rank of medical philosophers.

Dr. Stewardson is also a contributor to the pages of the American Journal of the Medical sciences. His papers, when the writings of others have been under consideration, are marked by a singular spirit of ingenuousness. He is scrupulous never to distort the meaning of the author, and rarely misquotes a sentence, where he supposes there is much danger of detection. If his style is not always the most courteous, it is plainly because there are few men, living or dead, whose

writings he considers as entitled to the slightest respect. An author of so much genius can hardly be expected to regard the efforts of the common race of mortals, with any other feelings than those of contempt. His acerbity of manner, and his numerous misrepresentations must be ascribed to this genius, which is too proud to look closely enough at the labors of others to understand them.

The most important original papers of our *savan* are contained in the numbers of that journal, for April 1841 and April 1842: they are entitled "Observations on Remittent Fever," and are illustrated by the numerous cases of the disease which the author had an opportunity of witnessing in the Pennsylvania Hospital, of which he is so distinguished an ornament.

This paper leaves nothing to be desired,—the subject is literally exhausted; and if the disease which it investigates has not been effectually eradicated from the human system, it is not the fault of its amiable and candid author. To attempt any thing like an analysis of it at this remote period would be a work of supererogation, particularly when it is remembered that the journal in which it originally appeared is read and admired in every part of the world where medicine is cultivated as a science, where profound thought, original research, and correct writing are appreciated, or where the supremacy of genius maintains its elevated and life-diffusing influence.

The latest contributions of our editor are, we believe, his "Notes and Additions" to the work, the title of which stands at the head of the present article. These consist mainly of two chapters on remittent and yellow fevers, topics as he informs us, but cursorily treated by Dr. Elliotson and his other commentators.

We were disposed to find fault with Dr. Stewardson for the brevity of his notes and editions, until we recollected that the intrinsic value of a work does not always consist in the number or magnitude of its pages. In composing the two articles under consideration, the author was evidently governed by the maxim of the ancient philosopher, that "a little thing gives

perfection, though perfection is not a little thing." The chapter on remittent fever is condensed from the immortal paper, already adverted to; that on yellow fever appears for the first time in these pages. It occupies precisely *eight pages and a third*, and is founded upon the observation of *a case* of that disease as it occurred in the Pennsylvania hospital. In this short space we are presented with a most graphic outline of the natural history of this truly horrible malady, its anatomical characters, diagnosis and nature, causes, mortality and other circumstances, together with a most able and learned account of the treatment. Considering his limited opportunities, it must be acknowledged that Dr. Stewardson has done wonders. He has in, truth, afforded full proof of the proposition, that "it is the peculiar privilege of genius to accomplish ends without advantages, and to overcome difficulties insurmountable to ordinary minds." If he had enjoyed more enlarged opportunities of observing and studying yellow fever, there is no doubt whatever that he would have exhausted the subject, as he has that of remittent fever. When we reflect upon his extraordinary powers as a writer and an observer, we cease to wonder that he did not, in this part of his labors, think worth while to avail himself of the researches of Rush, Jackson, Catel, and others—authors whom he esteems as quite obsolete. Louis. as is natural, he mentions with a singular degree of complacency, which arises probably not so much from any supposed excellence, as because it was his good fortune to be the preceptor of Dr. Stewardson. Several other writers, are also occasionally alluded to, but evidently with a degree of suspicion, clearly indicating that very little confidence is to be placed in their productions. This is as it should be; nay, as it must be. They lived before the discovery of the *numerical method*—before Louis, Chomel, and Stewardson, and therefore justly deserve to be forgotten.

Judging from the extraordinary ability displayed in the whole of this chapter on yellow fever, and the circumstance that it is founded upon the observation of a *solitary case of the*

disease, we are convinced that Dr. Stewardson is the only man in the profession competent to furnish a treatise on the art of writing medical books. We would therefore respectfully suggest to him the propriety of such an effort.

The modesty of Dr. Stewardson—we must be pardoned for recurring to this amiable trait in his character—is strikingly exhibited in the position he has taken for his additions to Elliotson's Practice. It is well known that the most prominent parts of every book are the beginning and the end thereof. Now, instead of introducing his "two chapters" at one or the other of these points, he has modestly placed them in the middle of "*Stewardson's Elliotson*," where, but for their superior excellence, and the circumstance of their being included in brackets, and headed by the name of the author in large capitals, they might readily escape the eye of the heedless student.

Dr. Stewardson, we are sure, does not belong to the tribe of writers, of whom we have spoken, who fancy themselves at liberty to mutilate the writings of European physicians, and engraft upon them their own crudities. He is a writer of parts, and we cannot forbear to thank him for the opportunity he has afforded us, by his contributions to this work, of introducing him to his backwoods' brethren. His are productions which they "will not willingly let die." Elliotson, President of the Phrenological Society of London, and late Professor of the Principles and Practice of Medicine in University-College, might have been forgotten; and even the name of Lord Brougham might have passed from the memories of men, but for its fortunate association with that of Thomas Stewardson. They are indeed lucky men—

O fortunatos nimium sua si bona norint.

Selections from American and Foreign Journals.

Proximate Cause of Hæmorrhage.—M. Andral, in his recently published Essay on Hæmatology, states it, as the result of his experimental researches, that some hæmorrhages are always connected with, if not immediately dependent on, a state of blood in which there is an excess of red globules; while others are very usually associated with an *hæmatosis*, characterized by a deficiency of the fibrine in the circulating fluid. The former are observed to occur in persons of a plethoric constitution; but they are far from being either as frequent, or as serious, as the second sort of the disease, such as takes place in scurvy and similar diseases. Is not this division of hæmorrhages very much the same as that adopted by the old writers, viz: into *active* and *passive?*—a division that is incompatible indeed with certain theories of modern times, but one with which neither clinical medicine nor therapeutic instruction can dispense.

(The remark made here is quite just. There are several kinds of hæmorrhage, just as there are several kinds of fever; it cannot therefore be wonderful that the same treatment is not appropriate in all. One case may require bleeding, and nauseating purgatives; while another demands the use of powerful tonics and astringents. The *internal* exhibition of alum is, we think, too much overlooked in the present day, as a powerful means of arresting many hæmorrhages).—*Med. Chi. Rev.*, Jan.

Mercury in Scrofulous Affections of the Lungs.—Dr. Graves makes some valuable, because practical, remarks on the effects of mercury in scrofulous affections of the lung. He was first led to the adoption of this mode of treatment by the successful results of mercury in the hands of Dr. O'Beirne in treating scrofulous inflammation of the joints. This employment of mercury in the treatment of scrofulous diseases was directly in the teeth of the prevailing theories of the day, according to which mercury was not only inadmissible, but absolutely mischievous in persons of a scrofulous diathesis. Dr. Graves was led by analogy to apply the same principle of treatment to incipient scrofulous inflammation of the lung. He points out the cases to which such treatment is applicable; it is, he says, only in those cases wherein scrofulous inflammation commences in the lung before any general contamination of the system has taken place, that mercury ought to be tried, and it will be of no avail except where the commencement of the scrofulous inflammation of the lung has arisen suddenly, and in consequence of the operation of some obvious cause, as catching cold, or the occurrence of hæmoptysis. Dr. Graves thinks that too much stress has been laid on the affection of the lung by writers on phthisis. In most cases, no doubt, the disease commences in the lung; but, in other cases, it passes through many changes, and affects various organs before it attacks the lung. Dr. Graves has a decided objection to the terms, "tubercular inflammation," and considers the whole theory of inflammation being excited in the lung by the presence of tubercles, to be founded on erroneous views. He considers, also, that tubercles do not act in all cases on foreign bodies. He thinks that, in the treatment of scrofulous bronchitis and scrofulous pneumonia, mercury is a most valuable remedy—where the attack is recent, and has occurred under circumstances which preclude any suspicion of previous tubercular disease.—*Med. Chi. Rev.*, Jan.

Veterinary Surgery.—We now pass on to notice a very remarkable form of hepatic disease in the horse, which well deserves the notice of the human pathologist.

It appears that, although a horse seems to be in perfect health, and is moreover capable of laborious work, the liver

may have become so softened and pulpy and its peritoneal covering so loosely adherent to its parenchyma, that a sudden exertion will cause a rupture of the viscus, and an immense extravasation of blood into the abdomen, to take place. The accident, as a matter of course, is generally fatal, and the death is sudden. The curious circumstance in this disease is that, in most instances, there are no premonitory symptoms of any hepatic derangement; the animal often has been remarkably healthy, the biliary secretion regular, and the alvine excretions natural. When the extravasation is large and rapid, the symptoms are those of internal hæmorrhage—pulse irregular and indistinct; action of heart tumultuous; profuse sweating; pawing; curling of the upper lip and pouting of the nose; lifting the hind legs to the belly; hurried respiration and deep and frequent sighing; distended abdomen; blanched conjunctiva and buccal membrane; amourosis; extreme debility; fainting and death.

In some cases, however, although the parenchyma of the liver has degenerated into one huge mass of bloody pulp, its peritoneal coat remains entire, or is only slightly ruptured. The symptoms then are much more indistinct than those we have just enumerated, and often far from being satisfactory, as regards the diagnosis. Weakness and faintness at work, diminished appetite, swelling of the hind legs, fulness of the abdomen, buccal and Schneiderian membranes pale, pulse frequent and feeble, occasional sighing, partial amaurosis, with dilated pupil of one or both eyes—these are the most common features of the case.

Purpura Hæmorrhagica in the horse is characterised by the occurrence of petechial and ecchymosed spots and patches in almost every part and tissue of the body—on the skin, the Schneiderian membrane, the conjunctivæ of the eyes, under the fasciæ and in the substance of the muscles, and occasionally also in the lungs, kidneys, and other viscera. The animal is uneasy, and in pain; his breathing is usually hurried and snuffling; and his pulse is rapid and wiry, or full and strong. As the disease advances, the echymosed swellings become confluent; a sero-sanguineous discharge drips from the nostrils; the Schneiderian membrane is sometimes nearly black; the circulation is more frequent and feeble; *the horse paws, or looks back, or anxiously turns his head from side to side* (a graphic description;) he totters, if made to walk about; becomes weaker, and dies. If blood be drawn, it is found to be thin and pallid, and separates rapidly into its two portions. The

urine occasionally contains much albumen, and coagulates by nitric acid and heat: sometimes it is mixed with blood.

As Mr. Field remarks, the disease is seemingly referrible to a morbid condition—characterised chiefly by an increased tenuity—of the circulating fluids. There may indeed be present, at the same time, an unusual laxity and dilatability of the blood-vessels, with a certain degree of obstruction in the capillaries, and an augmented impetus in the heart's action; but certainly the primary and essential feature of Purpura is an alteration in the composition and vital properties of the blood itself. This opinion is confirmed by the circumstance of its usual exciting causes being general debility, poor living, unwholesome diet, and excessive labor.

As to the *treatment*, bleeding may be occasionally necessary, when vital organs are affected or threatened; "but it rarely (does it ever?) benefits." Turpentine is useful; so are the sulphate of iron, the mineral acids, &c. The cold effusion is "particularly good." The pure air of the country, with grass feeding, is the best restorative.

In a fatal case of Hæmaturia, the peritoneal coat and cortical substance of the kidney (kidneys?) were entirely destroyed. The ureters were filled with blood: the bladder contained about two pints, mixed with urine. The liver was very pale; the intestines healthy. About a pint of blood was found within the pericardium. In another fatal case, where the quantity of blood lost had been enormous, the tubuli uriniferi and pelvis of the left kidney were found ulcerated, and the texture of the right one was soft and flabby.

Lithotomy.—The symptoms of calculus in the bladder are, as might be supposed, very much alike to those that are observed in the human subject. We read of the animal "staling blood after work,—continually making attempts to stale—straining violently and voiding only a small quantity at a time—and the urine being turbid and alkalescent." The actual presence of the stone is ascertained by an examination *per anum*, and by the introduction of a catheter or sound into the bladder. The following account of the mode, in which a horse is cut for the stone, is well worth a perusal: we cannot abridge it without injury.

"The animal was cast in the usual manner, and both hind legs were drawn to the shoulders, as if for castration. Read's new flexible catheter being passed into the bladder, a quantity of warm water was injected, sufficient to distend that organ and the urethra moderately. The catheter being withdrawn,

and holding the penis with the left hand, a slightly-curved groove staff, two feet long, was introduced, so as for the curved part to come into the sub-anal portion of the urethra, above the posterior edge of the ischium, extending towards the sphicter ani. An assistant kneeling on the left side of the horse, drew the penis forwards with his left hand, and gently pushed the staff backwards with the right, at the same time keeping the groove exactly beneath the *raphe*; this elevated the portion of the urethra to be incised. I then made an incision, a line from and on the right side of the *raphe*, through the skin and fascia, extending the length of it from three to four inches; and, pushing the penis a little on one side, I gradually divided the muscular and spongy portion, and exposed the mucous membrane of the urethra, when the finger readily detected the groove of the staff, into which a small incision was made sufficient to admit the *bistoire cachée*, following which with the index finger of the left hand, the membrane was divided to the rectum. Very little blood flowed, and the water of the urethra gushed out. The staff being removed, I easily introduced the small forceps through the urethra into the bladder, and grasped the stone, a portion of which flaked off. The large forceps were then employed, and, my brother holding the handles, I directed the blades upon the stone, my left hand being in the rectum. Having placed the stone in a proper position, I grasped it with the forceps, and with both hands gave it a half-turn, so as to place its widest axis between the pubis and rectum; and thus, with a moderate force, I gradually and evenly drew it out, the neck of the bladder readily dilating. Two stitches were inserted in that part of the incision nearest the anus, the lower part being left to itself."

The calculus consisted entirely of carbonate of lime and animal matter. The animal did well.—*Med. Chi. Rev.*, Jan.

On the Increasing Frequency of Cancerous Diseases.—M. Tanchon remarks, "that there is reason to believe that the frequency of cancer is on the increase, more especially in large towns. Mr. Farr tells us that, in 1838, the number of deaths (in England, we believe) from this cause was 2,448, while in 1839 it rose to 2,691. My own inquiries lead to a

similar conclusion; for, from a registry of cases of cancer of the uterus, I find that there were in—

	Cases.		Cases.
1830 - -	351	1833 - -	498
1831 - -	391	1834 - -	436
1832 - -	396	1835 - -	508

* * * * * * *

"Cancer, like insanity, is of much more frequent occurrence in civilized than in barbarous countries. Long ago it was remarked in the East, that the disease was much oftener found in the Christian than in the Moslem population there. Fabricius Hildanus was of opinion that it was more frequent in temperate than very warm climates; and this opinion has certainly been confirmed by the experience of some recent observers. M. Hamon, an eminent veterinary surgeon, who has been attached to Mehemet Ali's service for 14 years, informs me that he has never seen a case of genuine cancer in the native or Fellah women, and not many even in the Turkish women of Egypt. M. Clotbey has made a similar remark; and M. Bac, surgeon-major of the second regiment of African *Chasseurs*, never met with a single case during the six years that he resided at Senegal. Again, M. Baudens, now the head surgeon at the Val de Grace, whose practice at Algiers was most extensive for a considerable number of years, did not meet with more than two or three instances altogether."

M. Tanchon closes his remarks with the following general conclusions:

"1. The frequency of cancerous diseases appears to be on the increase, and this frequency seems to be proportionate to the degree of civilization to which a people has attained.

"2. It is towards the decline of life, and more especially in the female sex, that the development of cancer is most to be dreaded; but early age is not entirely exempt from its attacks.

"3. Glandular organs, and those in particular which are the most susceptible of excitement, are most frequently the seat of the disease.

"4. The proximate cause of the disease appears to exist in every part of the system; but rather in the fluids than in the solids.

"5. When not induced by any external cause, it seems to result from a molecular organic modification or lesion of the part, occasioned by various causes, which as yet are but little known.

"6. In the actual state of our knowledge, the treatment of cancer can be little else but empirical, like that of syphilis, dartres, &c. Still there is reason to hope that we may yet learn how to arrest, if not actually to extirpate, the morbid process. In many cases, we well know that the disease is remarkably stationary for a great number of years, and indeed that its existence seems not much to interfere with the full prolongation of life. What are the circumstances favorable to inducing such an arrest, we indeed are almost wholly ignorant; but much may be expected from a careful watching of such cases by metropolitan surgeons, and others who have the opportunity of seeing many cases of cancerous maladies. The regulation of the diet is unquestionably of primary importance, and hence every means should be adopted to keep the digestive and assimilative organs in a sound healthy condition, in order that there may be a regular supply of wholesome chyle."—*Gazette des Hôpitaux.—Med. Chi. Rev.*

Veratria in Facial Neuralgia.—An ointment composed of veratria, one part, to eighty parts of lard, has been found very useful as an external application in cases of facial neuralgia. But the preparation is much more efficacious if made with rancid instead of fresh lard, which is probably owing to a salification and greater solubility effected in the veratria by the agency of the free acid in the fat.—*Braithwaite's Retrospect.*

Advantage of Medicines in a Liquid Form.—It has been found that fifteen grains of sulphate of quinine, given in infusion of senna, is more efficacious as a tonic, notwithstanding the purgative quality of the mixture, than twenty-four grains of sulphate of quinine administered in the form of pills. Panizza supposes the causes of this to be that the senna, by promoting the peristaltic action of the alimentary tube, and augmenting the secretion of the bowels, excites the production of a fluid adapted perfectly to dissolve the quinine; and that the quinine, in passing through the intestine in a state of solution, is placed in contact with a much larger extent of surface, and disposed for absorption much more rapidly than if taken in a solid form.—*Panizza, in L'Experience—Lancet,* November 4.

The Automaton with Articulated Voice.—We have had the pleasure of examining privately this *chef-d'œuvre* of human ingenuity—the result of eighteen years' unceasing labor, by a German, named Faber. It is constructed upon the model of the human organs of voice, the tongue, larynx, &c., being made of caoutchouc. As voice is the sound produced by air driven from the lungs through the larynx, causing a vibration of the chordæ vocales, it is a function of *animal* life; but this function, in animals inferior to man, as well as in the idiot, is limited to the production of the *simple* or *instinctive* voice; while, in intellectual man, it becomes sufficiently complicated for the purpose of articulation. This is regarded as an evidence of man's intellectual superiority. Here, however, we find the same phenomena produced by an apparatus of caoutchouc and a bellows!

The automaton is represented by a bearded Turk, and the articulations are produced by playing upon sixteen keys. We were quite surprised at being addressed by the automaton, in words very distinctly articulated, thus: "Wel-come Doc-tor For-ry. Please excuse my slow e-nun-ci-a-tion." After giving various other illustrations of his vocal powers, the automaton sang "Hail Columbia," &c.; as we were about leaving, he said, "Gen-tle-men, I thank you for your vis-it."

But, after all, *cui est bono?—New York Jour. Med.*

Capsules of Cod-Liver Oil.—We have been shown by Mr. Milhau, at his pharmacy, 183 Broadway, beautiful capsules of cod-liver oil, prepared by Mr. W. F. Stone, by means of which the unpleasant taste of this medicine is wholly obviated. Each capsule contains, besides the cod-liver oil, one-twentieth grain of iodine. This oil is a remedy which has recently come into notice, as shown in some of our previous numbers; and, in Germany, it is regarded almost as a panacea.—*Ib.*

Compliment to the Memory of Sir Charles Bell.—Sir Robert Peel has addressed the following letter to Lady Bell:

"*Whitehall, September* 4.

"*Madam:* I have had great pleasure in recommending to Her Majesty, that in consideration of the high attainments of your lamented husband, and the services rendered by him to

the cause of science, a pension of one hundred pounds per annum for your life, shall be granted to you, from that very limited fund which Parliament has placed at the disposal of the Crown for the reward and encouragement of scientific labors.

"This pension, small in amount as it necessarily is, will perhaps be acceptable to you, as a public acknowledgment on the part of the Crown, of the distinguished merit of Sir Charles Bell.

"I have the honor to be, Madam, your faithful and obedient servant,

ROBERT PEEL."

[*Am. Jour. Dental Sci.*

American Origin of Syphilis.—Although the question, whether syphilis existed in the West Indies and on the continent of America at the period of their discovery by the Spaniards, is, by the profession in this country, very generally decided in the negative; yet, in order effectually to remove all remaining doubts, and to efface completely the stigma thus cast upon the New World by the Old, at a time when, in Europe, the opinion that the human species, and indeed the whole animal kingdom, in America, had become entirely *degenerated*, we will here present the evidence of two of the most accomplished and distinguished historians of modern times. Peculiarly qualified for this decision by the nature of their literary pursuits, it will suffice to say that the one is the author of "The Life and Voyages of Columbus," and the other, of "Ferdinand and Isabella," and more recently, "The History of the Conquest of Mexico." After this testimony shall have been presented to the world, this long-mooted question must be considered as conclusively put to rest, and never more to be revived.

The following letter is addressed by Mr. Prescott to Alexander E. Hosack, M.D.

"*Boston, January* 22d, 1844.

"*My Dear Sir:* I have received your note of the last week, inquiring whether, in my researches relative to the History of Mexico, I had met with any trace of the venereal disease among the Aborigines previous to the coming of the Spaniards. I observe, also that you remark that Dr. Forry had already put the same question in a letter addressed to me some time since. I assure you that I never received that letter.

If I had, I should have answered it with the sincere pleasure and promptness with which I now reply to yours.

"In a note in the 'History of Ferdinand and Isabella,' I took occasion to express my own conviction that the venereal disease did not exist among the natives of America at the time of its discovery. I had met with no allusion to it in the narratives of Columbus or his son Ferdinand, or in any other record of the Spanish adventures.

"I have been led into a much wider range of observation in preparing the 'History of the Conquest of Mexico.' But it has served to confirm my former opinion, since I have never met with a notice of this disease, or of any which resembles it. The ancient chronicles speak of an Indian epidemic, called the *Matlazahuatl*, which swept off great numbers of the natives both before and after the Conquest, and which seems to have had some resemblance to the yellow fever. They also notice the introduction of the small-pox by a black, who came into the country the year after the arrival of Cortés. The Spaniards would certainly not have omitted to notice so terrible a disorder as the venereal, had it been found among the natives; especially, as considering their own licentious indulgence, it must have fallen very heavily on themselves. Their uniform silence, therefore, is evidence so strong, that it may be called positive, rather than negative, and may be considered as establishing the fact that the disease was not known in the Mexican empire at the time of its discovery. Whether a disease so easily propagated among adjacent tribes, and which seems to be circumscribed by no parallel of latitude, could have existed in other parts of the Continent without finding its way into Mexico, is a question which your own knowledge of the subject will enable you to determine better than I can.

"Believe me, my dear sir, very truly yours,

"WM. H. PRESCOTT.

"ALEX. E. HOSACK."

We here present the note of Mr. Irving, written just on the point of his departure as Minister to Spain:

"*New York, March* 22, 1842.

"*Dear Sir:* In the hurry of various occupations preparatory to my departure, I find that I have your note, of March 12th, lying unanswered. I have not now time to refer to papers and documents to refresh my memory on the subject of your inquiry. I recollect, however, that my impression was, while

writing the History of Columbus, that the disease you mention did not exist among the natives of America at the time of the discovery, nor among the voyagers during the first voyages; but that it originated in Europe. When I have leisure, I will look into the matter in Madrid; and should I discover any facts upon the subject, I will communicate them to you.

"Very respectfully. &c.,

"WASHINGTON IRVING.

"Dr. Jno. Watson."

[*New York Med. Jour.*

Effects of a large dose of Quinine administered by mistake.—In November, 1841, a young lady, aged eighteen, of a delicate constitution and nervous temperament, was under the treatment of a medical friend of mine for severe hysterical symptoms. Almost every evening she had repeated fits—epileptic in appearance, although decidedly hysterical in character. The remedy administered was quinine, in combination with sulphuric acid; she began with six grains per diem, which was soon increased to ten, and afterwards to twenty. When she had been taking the medicine for about a fortnight, she received a six ounce bottle, containing six drachms of quinine in solution, with an ounce and a half of the dilute sulphuric acid; of which she was directed to take one teaspoonful at a dose, in a wineglassful of water. Not regarding the directions, however, she poured out a wineglassful—about one-third of the bottle—and swallowed it.

Her first impression was one of extreme acidity of the mouth, and a most disagreeable sensation about the teeth. This was followed by nausea and extreme giddiness, and tendency to stupor. Her friends, believing that she had taken a narcotic poison, insisted on making her walk up and down, after the manner generally recommended for narcotic poisoning. After this had been kept up some time, the stupor abated, and she passed into a state of semi-consciousness, with the feeling as if she was obliged to keep moving in spite of herself. She was intensely thirsty, and drank a great deal of water. But all the bad symptoms gradually subsided without medical aid, and the epileptic fits, which were the occasion of the treatment, did not appear for a very long time afterwards. Her catamenia were brought on immediately.—*Med. Exam., March.*

Remarks on Italian Medicine.—An intelligent French physician, M. Combes, has recently paid a visit to Italy, with the view of examining into the state of medical doctrine and practice in some of the leading schools of that interesting country. We have not yet seen the original work, but, meeting with a copious review of it in one of the Paris Journals, we deemed it worth while to make the following extracts from it.

"Hippocrates has truly observed that 'in general whatever the soil of a country produces is conformable to the country itself.' This remark is quite as applicable to the inhabitants, as it is to the vegetable productions, of a country. The character and temperament of man are in no slight degree influenced by the medium in which he is born and developed; his bodily health, as well as the passions of his soul and the faculties of his mind, are all more or less under the control of the physical circumstances in which he is placed. If he is the king of nature, his sovereignty resembles that, not of an arbitrary or despotic, but of a constitutional throne, hemmed in by charters and by parliaments; and the power that he wields is ever under the weight of legal restrictions. How little suffices to alter the character and the energies of human beings! A few additional degrees of temperature, the exposure or non-exposure to a certain wind, the nature of the soil on which they live—these, not to mention many other circumstances, are found to modify not only the characters and manners of a people, but even the vigor and the power of their intellect. You aspire to the glories of science, and the atmosphere which you breathe condemns you to become an artist; your mind dreams on discoveries of practical philosophy, and pants to tread the path of calm observation, and you find that, in spite of all your wishes, your imagination cannot resist the allurements of nature around you, but plunges into the fairy domains of ideality and romance.

* * * * * * *

"Under whatever clime human beings come into this world, they all bring with them at birth the same constitution of moral development; the same faculties lie dormant in the souls of all. These, indeed, are unequal from the first in different persons, in consequence of certain hereditary elements which stamp a peculiarity on each nation, each family, and each individual; and this inequality will be more and more strongly marked according to the influences of climate and of early education. This is the reason why nations, although possessing most of the attributes of intellectual

greatness, are nevertheless distinguished from each other by the special development of one faculty in a predominant degree. In all ages have the Greeks been pre-eminent for the fervor of their imagination, and the inhabitants of Britain for their cold and prudential reason.

"Nations, like individuals, have therefore their characteristic temperaments or idiosyncrasies of constitution. Now the temperament of Italy is its ideality; its very existence is eminently artistic. Living in a region clothed with light (*vestitos lumine colles*), bathed in a warm and balsamic air, and breathing an atmosphere of romantic associations, little is the wonder that its inhabitants are so distinguished from almost every other people for the richness and grace of their sensual conceptions. Everything in nature around them leads the mind to indulge in images of softness and beauty, and to withdraw it from abstruse and elaborate studies. Now what is the result of this tendency in reference to scientific pursuits? In schools, where pupils and masters alike have all more of the poetic temperament than they are themselves aware of, the character of the instruction will certainly be more or less dogmatic; and why?—because implicit faith is a positive *besoin* of such a mental organization. Such a state of mind naturally leads on to a taste for generalizing on all subjects, and this very tendency is promoted by the copious richness of their sonorous language. Thus it is that the systematic conceptions of the Italians, proceeding from deep conviction, lead to exaggerated applications in theorizing—and often, too, to an inordinate rashness in practice.

"The characteristic features of French medicine in the present day are a sort of disrelish for all systems, and a taste for the elaborate investigation of every problem of inquiry. Hence the practice of rigorous and oft-repeated observation, the numerous experiments, and the constant recourse to the aids of the scalpel, the test-tube, and the microscope. Indicative of the same thing is the subdivision of science into a number of different branches. Each of these is pursued with indefatigable zeal by its different votaries.

"It is scarcely necessary to allude to the characteristics of German medicine: the same laborious curiosity and indefatigable research, the same fondness for mystical speculation, the love of the marvellous and extravagant in physics as well as in metaphysics—these long have been, and still are, the prominent features of the German school."

* * * * * * *

In Italy at present (according to the observations of M.

Combes) there are very few men who apply themselves with diligence to the patient investigation of details upon any particular subject of inquiry. Most of the physicians have adopted certain general principles of medical doctrine, and on these they base their practice. Hence it is that almost all their treatises assume the synthetic form, and that, even in their works of elementary instruction, the exposition and description of details are too often sacrificed to the abstract generalities of an ingenious dogmatism.

But let it not be forgotten that we are talking of a country which has produced a Spallanzani, a Morgagni, a Scarpa, &c., and can still boast of Bellingeri, not to mention other distingnished names of medical literature. Yet, in spite of these eminent exceptions, it cannot be denied that many of the branches ef professional knowledge have made but little progress, for very many years, on the other side of the Alps.

Physiology has retained pretty generally a purely dynamic character; the classical work of *Medici* does not even mention a vast number of well established facts, and the same remark holds true of Professor Martini at Turin. If such be the state of physiology, or that branch of medical science that treats of the functions of the body in a state of health, we cannot be surprised that those of pathology and of clinical medicine are very faulty and defective in many respects.

"In some districts of Italy, and especially at Naples and Modena, Hippocratism is altogether prevalent. In the latter city, indeed, the Faculty of Medicine may be considered as an association less for instruction in modern medicine than for the perpetuating the doctrines of the Coan sage. The orthodoxy of the school is based upon them; everything is redolent of antiquity; the students are taught to regard the Aphorisms as the oracles of medical truth; and when they aspire to the doctorate, they are called upon to expound and illustrate one or more of these pithy sayings; and it is with their hands laid upon the works of the old Greek that they take the oath upon the day of their inauguration.

"While the doctrines of the Hippocratic medicine, more or less liberally interpreted, are almost universally received through the whole of the south of Italy, the northern half of the Peninsula has been long agitated by the disputed tenets of Contra-stimulism. Turin, Pavia, and especially Milan, are at the head-quarters of this school. Rasori, its founder, started, it is well known, as a disciple of the Brunonian doctrines, and was the translator of the Scotch physician's work. All the phenomena of disease he strove to reduce to one

simple morbid action, viz: excessive or deficient stimulation; and like every other advocate of an exclusive system of pathology, he fell into the most egregious blunders, which proved to be injurious alike to sound theory and to safe practice. All diseases he considered to be systematic or general; and local inflammations therefore he looked upon as mere complications or accidental phenomena—the very reverse of the Broussaian creed. Professor Tommasini, of Parma, adopted a sort of intermediate doctrine between these conflicting systems. Assenting to the general principle of his fellow-countryman Rasori, he was too sagacious not to observe that local irritation, when extensive or long continued, is apt to give rise to constitutional diseases. Let us not deprive this distinguished physician of his due; it is right to acknowledge that he clearly enunciated the importance of local affections, as the cause of many diseases, before Broussais had published a line upon the subject.

* * * * * * *

"One of the most eminent physicians of Italy in the present day is M. Buffalini of Florence. His clinical lectures draw a large concourse of students, and his fame nearly equals that of his distinguished rival of Parma, Tommasini. He is generally regarded as 'un medicin organicien;' and yet his lectures and practice savour strongly of the Essentialist school. In commenting upon any case of fever, he pays minute attention to every appreciable alteration alike of the fluids and of the solids, and he does not hesitate to acknowledge openly that the changes observable, either in one or in the other, are by no means uniformly in accordance with the severity of the constitutional affection, or can be considered as the proper *causes* of it. In many respects he is a decided Humoralist; but while leaning strongly to the opinion that most fevers are attributable to certain changes in the circulating fluid, he on the whole does not trouble himself much with prying into the nature of morbid individualities, but contents himself with scrutinizing their exciting causes, the various symptoms which they exhibit, and with devising the means best fitted for their relief. Every one, who has had an opportunity of witnessing his practice, speaks in high terms of it: avoiding the pernicious errors of Contra-stimulism, (which he has contributed in no small degree to throw into discredit,) he shows great discretion and tact in the use of his remedies. He has published an able work entitled '*Des fondemens de la Pathologie Analytique.*'

* * * * * * *

"Italy is far behind France in many of the departments of medical science, and certainly in none more so than in chemistry. There are no good laboratories for the preparation of medicines, in almost any part of the country; and hence little or no progress has been made in toxicology, although the writings of M. Orfila have been long highly appreciated. What will probably surprise most travellers, as much as anything, is to find that no correct analysis of the numerous mineral waters of Italy has been made by any native physician.

"Italy possesses more journals of medicine and pharmacy than France does; (we certainly were not prepared for this announcement); but the division of the country into so many separate states places a great bar to their diffusion and general usefulness. The medical press suffers much from the consequences of the general political organism of the country; it has not a few obstacles to overcome, and a good many dangers to avoid. Thus, for example, when Homœopathy first made its appearance at Milan, under the patronage of the Austrian Government, the subject, it was soon found, could not be discussed in all its bearings with perfect freedom. The whole business of journalism is fettered and cramped by restrictions and vexatious annoyances. Hence it is that scarcely any of the periodicals bear that stamp of originality and freedom of opinion, which constitute the main utility of such publications; and that their chief contents are mere compilations from the French, English, and German journals. As long as such a state of things lasts, we cannot look for that energy and devotedness in the cause of professional advancement which we find in the writers of France, Germany, and Great Britain. Surely medical science may fairly be regarded as a free and open field for unlimited boldness of speech and inquiry; but alas! it has always been found that tyranny is never satisfied until it has brought everything under its iron yoke."—*Bulletin of Medcal Science—Gazette Medicale.*

THE WESTERN JOURNAL.

NEW SERIES.—VOL. I.—NO. IV.

LOUISVILLE, APRIL 1, 1844.

MESMERISM.

We think it highly probable, that a few of our readers may feel disposed to quarrel with us for bestowing so much time, and so many pages of our Journal on mesmerism, which, by many, we know, is esteemed an exploded humbug, unworthy of any further investigation. In justification of our course, we must be permitted to say, that to many of the first minds of the age mesmerism does not so appear—that it has found warm advocates among the most intelligent men of every community where experiments have been made in it—that it has been thought worthy of investigation by many learned bodies in our own times, and was examined by a committee of the French Academy, in the last century, at the head of which was Franklin. A subject, said to present so many strange and wonderful phenomena, is assuredly entitled to the consideration of the philosopher. And as a physiological subject it has peculiar claims to the attention of medical men. If not examined by them, who will investigate it carefully, so as to separate all that is false in

it from what may be true? The report contained in our last number will appear tedious to most readers; but it presents a mass of testimony which was collected with great care, and which in the minds of the unprejudiced must go a good way towards settling one of the disputed points in mesmerism.

The article in the present number, by Professor Drake, is a commentary upon the facts set forth in the report. We need not bespeak for it the attentive perusal of our readers. No one will fail to read that, and we venture to say that no one will rise from the perusal of it without a strong conviction of the plausibility of the hypothesis advanced. If Dr. Drake has not explained the phenomena attending mesmeric somniloquism, he has offered a theory which strikes us as coming wonderfully near to a satisfactory solution. At all events, it will not be denied that he has produced a very able and interesting paper on the subject, and with it we dismiss mesmerism for the present. Y.

LUNATIC HOSPITALS.

We take a deep interest in the reports of these benevolent institutions. Their statistics are consolatory to suffering humanity—among the proudest trophies of the healing art. We have before us, at this time, three annual reports from lunatic asylums, of which we shall give a short account. The first we shall notice is

The Fifth Annual Report of the Ohio Lunatic Asylum, at Columbus. Extensive additions have been made to the buildings of this asylum, by which it will be capable of accommodating, when all are completed, about three hundred and forty-five patients, which, it is supposed, will be equal to the wants of the insane population of that state. "The number of patients," says the report, "who have been inmates of the institution since the 15th of November, 1842, is 207—males 105, females 102, all citizens of the State of Ohio. The number of patients remaining in the asylum at the close of last year was 142—75 males and 67 females. During the past year 65 patients have been admitted, viz: 32 males and 33 females. The number discharged in the past year was 59, viz: 30 males and 29 females. Of these 38 were discharged recovered, 7 improved, 10 stationary, and 4 by death. Two others are con-

valescent, and have a strong desire to return to their friends, but we think it most prudent for them to remain a few weeks longer. As a general remark, it is much the best plan for convalescents to remain until their bodily health is firmly established, and full proof is exhibited of their entire exemption from mental disease. The few instances in which recoveries seem to have been promoted, by a return of the patient to the endearments of home and friends, are but extremely rare and uncertain exceptions to a safe and substantial general rule. By reference to our summary remarks it will be seen that, of the recent cases discharged during the past year, 100 per cent. recovered. It is very seldom that every circumstance unites to favor a result of this kind."

Since the opening of the institution three hundred and fifty-four applications for admission into it have been refused for want of room; and the report supposes, that in Ohio alone there are at this time, between three and four hundred insane persons who need the protection and care of a public hospital. Happily, it seems to be the policy of that State "to make abundant provision for the reception of every insane citizen, whether male or female, rich or poor, curable or incurable." It is a humane and wise policy, deserving of all praise.

This report abounds in statistics of great interest. We regret that we cannot copy more extensively from it, and that our limits preclude us from any notice of the seven cases related in the appendix to the report. The author of the report, William M. Awl, M.D., superintendent of the institution, is entitled to great credit for the fulness with which he has reported all the facts that interest the medical philosopher.

The Annual Report of the Physician and Superintendent of the Eastern Asylum, at Williamsburg, Va. This report is for 1843, and we are indebted for it to John M. Galt, M.D., superintendent and physician. "The number of patients who have been inmates of the Eastern asylum since the first of January, is one hundred and thirty-five. Of these, eighty were males and fifty-five females. Six of the male patients and nine of the females were colored persons. The number of patients on the first of January, was ninety-three, viz: males fifty-seven, females thirty-six. During the year forty-two have been received: twenty-three of these were

males, and nineteen females. The number of the discharges is twelve, viz: nine males and three females; one male and one female now in the institution are convalescent. The number of the deaths is fourteen, viz: nine males and five females, or about ten and a third per cent. The number of patients at present is one hundred and nine, viz: males sixty-two, females forty-seven." From the 1st of July, 1841, to the 1st of July, 1843, or during the space of two years, 50 patients were received: of this number 24 have recovered, counting one case in the institution now convalescing. This gives a per centage of 48.51, which taken simply is very high; and under the adverse circumstances with which the institution has had to contend, must be considered still higher. We believe that there are few institutions exhibiting a higher per centage, under any thing like similar circumstances. The per centage of the Massachusetts State lunatic hospital at Worcester is 43.41: which institution, taken in all its characteristics, may be considered as the first in the world."

This report is drawn up with great care. The author feels a just and laudable pride in the management of the institution for which he is responsible, and may contemplate the fruits of his stewardship with high satisfaction. His report wears a studious and pholosophical aspect. His heart is evidently in the subject, and he has made himself master of it.

Eleventh Annual Report of the Trustees of the State Lunatic Hospital, at Worcester, Mass. We received a copy of this report a few days ago, and we opened it in the fullest conviction that we should find much in it to admire. "The noblest monument of the public charities of Massachusetts," as the report styles it, it is an institution which would do honor to any country in the world. "From the laying of the foundation-stone to this day," says the report, "Heaven seems to have directed the undertaking, and to have crowned with its mercies the entire work. Not to see it, we should be blind; not to acknowledge it, we should be most ungrateful." We subjoin the following summary:

"Eleven years have passed since this hospital was opened for the reception of patients; in that time there have been received one thousand and seven hundred and seventy-seven patients.

"Committed by the courts, 1311; committed by overseers of the poor and friends, 466; the number of discharges is 1522; the num-

ber of recoveries is 792; during the last year there have been in the hospital, different patients, 458; at the commencement of the year, 238; admitted during the year, 220; now remaining, 255; recovered, 116; died, 22; discharged improved, 32; discharged as harmless and incurable, 24; sent to house of correction, for want of room, by trustees, 2; discharged by the courts, as incurable and dangerous, 6; discharged by trustees' private board, incurable, for want of room, 1; average number of patients in the hospital for the year, 244 1-6.

"Of those who have recovered, ninety-four were cases of less duration than one year, and thirty-two of longer duration.

"Application has been made for one hundred and fifty-seven who were not received at the time, and forty-eight who have not been received at any time, for want of room."

A richly-merited compliment is paid by the trustees of the asylum to Dr. Woodward, the accomplished, humane, and indefatigable superintendent, whose gentleness, courtesy, skill, and energy have made the hospital, in their own language, "a model and a praise in our own and in foreign lands."

"All the American hospitals for the insane," says Dr. Woodward, "must be able to accommodate from *three* to *four thousand* patients. They must relieve a vast amount of suffering of patients and anxiety of friends. They are probably not surpassed for custodial care, or remedial treatment, by any institutions in the world."

Dr. Woodward, very justly, in our opinion, dissents entirely from the judgment of Jacobi, that the sexes should be kept in separate establishments, and be allowed no intercourse or communication with each other. He insists upon the judicious intercourse of the sexes, as being as favorable in its influence upon insane men and women, especially when convalescent, as it is upon individuals in health. He would have the insane treated as other people are, keeping out of sight as far as practicable their peculiarities, encouraging them to self-respect and rational conduct, and getting them into habits of order and accustomed channels of duty and employment. Concerning devotional exercises, his remark is, that "our confidence in the benefits which result from religious worship for the insane increases from year to year." The experience of the other superintendents is to the same purpose. Similar declarations are made in each of the foregoing reports. Y.

THE BURNING-WELLS OF KENAWHA.

The following account of a most curious phenomenon, although not strictly professional, will be read, we are quite sure, with interest. We are indebted for it to Mr. James Putney, of Virginia, lately a pupil in the Medical Institute of Louisville. Y.

The Kenawha salt-works of Virginia are confined to the banks of the river of that name, and extend eight or ten miles up and down the stream. These works have been, and are yet, the source of most of the domestic salt consumed in the west, and have been in active operation for more than thirty years. The salt-water by which this supply is afforded is obtained by sinking a well on the brink of the river, at the point of low-water-mark, perforating the solid rocks by a hole not more than two or three inches in diameter; and it is a singular fact, that the salt-water is not to be obtained at any other point—not half a mile from the brink of the river. By a very tedious process, the rock has been penetrated to the depth of from six to twelve hundred feet, and in a few instances to even a greater depth. This operation was formerly accomplished by hand, or by horse-power, but is now done by means of steam. In boring to this immense depth, nothing is met with but the solid sand-stone rock, with the exception of two or three strata of bituminous coal. These strata are from a few inches to six feet in thickness, and are found only in the first five hundred feet. Fissures are sometimes met with in the rock which are a few inches in depth, and which contain water, or gas, sometimes both. As soon as the auger reaches these cavities the gas issues with great force, and is quickly exhausted. When a good fountain of salt-water is attained by the auger, it rises nearly to the level of the river, and is then pumped out, and forced into the reservoir for use.

To all who are acquainted with the history of these works it is known, that there exists in this county a remarkable phenomenon, which has received the common appellation of the *Burning Springs*. These are nothing more than excavations in the earth, capable of containing sixty or eighty gallons, and which, in a wet season, are filled with water. The gas rising through the water gives it the appearance of a great boiling caldron, which, if a torch be applied, instantly takes fire, and burns with a beautiful lambent flame. This has excited great fear and astonishment among the ignorant and su-

perstitious, from the circumstance of the water's boiling, and apparently burning on its surface, and yet remaining cold. But a more recent exhibition of this phenomenon is to be seen in the *Gas-wells*, a short description of which I will now proceed to give.

A gentleman in boring his well, after having penetrated about one thousand feet, was surprised at an immense rush of gas, the carburetted hydrogen, mixed with strong salt-water. The gas was expelled with such force that it threw the water at least a hundred feet into the air, forming a most beautiful *jet d'eau*, and covering the earth with its white briny foam. The gas and water thus continued to be thrown out for many weeks, when the owner of the well began to think of turning it to some useful purpose. He proceeded to adjust suitable pipes to the well, and conveyed the gas to the reservoir on the top of the bank, the gas forcing the water before it with great power. By an apparatus fixed for the purpose, the water was separated from the gas, and both were conveyed to the furnace—the water into the pans, and the gas to the fire, to be applied to the bottoms of the pans. The whole furnace was thus filled with flame by which it was found that a saving of two-thirds of the fuel was effected. It was estimated that the quantity of gas emitted in twenty-four hours was sufficient to evaporate sixteen hundred gallons of water. The pipes in which it was conveyed to the furnace were five inches in diameter, and yet such was the force with which it was expelled, that a man was not capable of holding his hand upon the mouth of one of the pipes. A constant stream continues to issue from the well, its velocity, every few seconds, being much accelerated, in which it very much resembles the escape of steam from the engine of one of our largest steamboats, not, however, with the same regularity, nor with such distinct intermissions. The process of manufacturing salt with this gas is exceedingly interesting. The gas first expels the salt-water from the bottom of the well, and forces it into the reservoir. Then being ignited beneath the furnace, it converts the salt-water into brine. The brine is next conveyed into a wooden vat, and is then converted into salt, by the agency of the same steam which was generated in converting the water into brine.

The eruption of the gas at this point occurred about two years since, and it has continued to be emitted with the same copiousness

ever since. A few months after its first expulsion another well was bored at a distance from it of about a hundred yards with similar results, the quantity of gas discharged being fully equal to that of the first. Since that time six other wells have afforded the same phenomenon, and one of these in particular deserves notice on account of the vast quantity of the gas and water thrown out. This is about a mile distant from the first. This well, it is computed, will supply salt-water in sufficient quantities to make a thousand bushels of salt in twenty-four hours, and enough gas to convert forty or fifty thousand gallons of water into steam. In some of these wells the salt-water is, unfortunately, not very strong, and it is found a difficult matter to bore them to a greater depth.

An occurrence lately took place in one of these wells worthy of notice. After having emitted the gas for some time, the escape suddenly ceased, and in the belief that some obstruction was offered to its egress, the workmen were ordered to sink the augers and remove the obstacle. Suddenly a trembling of the earth was observed for many yards around the well, followed by a violent explosion, and a forcible expulsion of the augers, and a flame of fire—which presented a beautiful, and even sublime spectacle. The gas continued to burn until it was extinguished by the violence of the winds. Ever since, there has been a free emission of the gas. How long it will last, of course, cannot be determined; there seems to be no diminution in quantity since its first appearance.

The *burning* springs above referred to, have been bubbling up ever since the first white man set his foot upon this strange soil, without any diminution of energy. The amount expelled from them is no trifle—probably enough to furnish this city with lights. The gas which issues from them, as well as from the eight wells, is impure, though it burns with a beautiful flame. Before, as well as after, it is ignited, it exhales a most disagreeable sulphurous odour.

J. P.

Louisville, February, 1844.

ANATOMICAL ATLAS.

Through Mr. James Maxwell, jr., we have received from the publishers, Messrs. Lea & Blanchard, part second of this beauti-

ful work, containing ninety-one figures illustrative of the dermoid and muscular systems. The execution of this, as of the preceding number, is very admirable, and must commend the Atlas to the profession as one of the first works of its class. It furnishes all the information that drawings can afford, of the structure of the human system. No student, who is trying to acquire a knowledge of anatomy without the aid of subjects, ought to be without it; and the practitioner whose anatomical reminiscences are beginning to fade will find it a valuable remembrancer. Y.

BOOKS RECEIVED.

We have received from the publishers, through our friend, Mr. Jas. Maxwell, Jr., several valuable works, which we have not been able to notice in the present number, but which shall be attended to anon. One of these is a volume, which we have read with great pleasure, from the press of Messrs. Lea & Blanchard, by Professor Chapman, on *the diseases of the Thoracic and Abdominal Viscera*. A new edition of Dunglisson's learned work on Physiology, from the same press, was also among them. Another was *Curling on the Testis*, of which a full notice will be prepared for an early number; and a fourth was Goddard's splendid volume *on the Teeth*, for both of which we are indebted to Messrs. Carey & Hart. The mechanical execution of these works shows a rapidly improving state of the art of printing in this country. We shall take the earliest opportunity to speak of their literary and professional merits.

THE

WESTERN JOURNAL

OF

MEDICINE AND SURGERY.

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